

START

KAISER ENGINEERS HANFORD

B-714-005

KAISER ENGINEERS HANFORD COMPANY
POST OFFICE BOX 888
RICHLAND, WASHINGTON 99352

May 29, 1990

NO. KAISEEH1348M



Mr. S. R. Briggs, Project Manager
Grout Laboratory Projects
Westinghouse Hanford Company
P. O. Box 1970
Richland, Washington 99352

Dear Mr. Briggs:

PROJECT B-714, GROUTED WASTE DISPOSAL FACILITIES VAULTS

Reference: Acceleration Proposal Provided by David A. Mowat Company

Attached please find the proposal provided by David A. Mowat Company. The proposal is based on working seven ten hour shifts per week to catch up schedule deficiencies.

Kaiser Engineers Hanford (KEH) has reviewed the proposal and provides the following comments.

The overall proposal is based on making up the lost time by providing additional available working hours. Only ten days of contingency are available for this effort, this could be lost with just one change to the scope or by weather conditions. A comparison of time available working two eight hour shifts verses the seven tens increases the additional available working hours and allows for nineteen (19) days contingency KEH feels is needed due to work and scope changes.

The cost in the proposal is detailed and well explained. The real question is will the money spent on acceleration actually put the project on schedule. There could be no more than a 50% probability of achieving success with the acceleration. The qualifications required by David A. Mowat in most cases cannot be met. Due to the time constraints in developing the proposal, a detailed evaluation of scheduling the different activities necessary for completion could not be performed. The scheduling coordination necessary to maintain acceleration with the proposed staff does not seem achievable. Additional field staff would be necessary to support the acceleration.

The qualifications required by the contractor to support acceleration can only be partially met. In particular:

91120551570

Qualification Number 2: This would required modifications to the contract for submittals, returning RFIs in twenty-four (24) hours is not always practical depending on the technical content. There is no way NCRs can be dispositioned within twenty-four (24) unless they are rework.

Qualification Number 3: This cannot be guaranteed with the present open items, additional changes will be coming.

Qualification Number 4: Not all conditions can be met due to federal procurement regulations for changes. This also is not relevant to the proposal.

Qualification Number 5: This is part of the proposal and assumed that money is available.

Qualification Number 6: This could effect the quality of the product and cause possible rework. This would also required modifications of documents and procedures.

Qualification Number 7: Due to recent results on placement of asphalt against thermoboard, the temperature is critical to maintain compaction requirements and achieve required specific criteria.

Qualification Number 8: Depending upon the final performance assessment this could be possible if trenching is eliminated with thin layers. Thin layering will accelerate pipe placement on the vaults if it happens.

Qualification Number 9: Survey work is of necessity to be done when the contractor is complete and not as an interim concurrence check.

Qualification Number 10: The form stripping at three (3) days is feasible and would be supported.

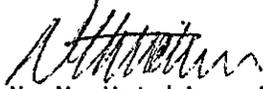
The David A. Mowat proposal is concise and very well done. The limited time to produce the proposal was well spent. The proposal has no time for delay which would be very costly to the project. Again KEH emphasizes that the chances of succeeding are low and the costs to accelerate, although justified by the proposal, are expensive, therefore, KEH does not recommend perusing the acceleration presented in the proposal.

1
0
9
1
5
5
0
7
1
1
6

S. R. Briggs
May 29, 1990
Page 3, B-714-005

If you have any questions, please contact K. C. Burgard on 376-2589.

Sincerely,



N. M. Hutchins, Manager
Environmental and Waste Management

NMH:clj

cc: R. T. French

91120551572

DAVID A. MOWAT COMPANY
GENERAL CONTRACTORS

May 16, 1990

Letter No: 250-9005-247

Kaiser Engineers Hanford
Post Office Box 888
Richland, WA 99352

Attention: Jim Mortimer
Trl. MO-12, 200-East Area

Re: Contract: KEH-5162 (B-714) for Grout Waste Disposal Facilities
Acceleration Proposal (Change Order Number 18A)

Spec Sect: GC16

Gentlemen:

Reference is made to KEH Letter #DAM-5162-102 dated 3/8/90, regarding the acceleration of vault #102. Attached is our preliminary review and analysis of the proposed acceleration of the Hanford project. At this point in time, the following two (2) conditions exist:

1. The project completion will be delayed due to the interruption of the critical path, or
2. The project may be accelerated to mitigate the project delay.

The proposal is structured to show the net difference in cost. The cost of the delay related to the interruption of work due to Change Order Numbers 7 and 11, is \$748,986 where the cost of accelerating would be \$3,800,089. If KEH elects to accelerate they would save the expense of the extended performance due to the delay.

MAIN OFFICE
13400 N.E. 16th Street
P.O. Box 1201
Bellevue, Washington 98009
Contractors License MOWATDA365LS
(206) 747-7393
Fax (206) 641-8588

HANFORD OFFICE
P.O. Box 1369
Richland, Washington 99352
(509) 373-2850
Fax (509) 373-3432



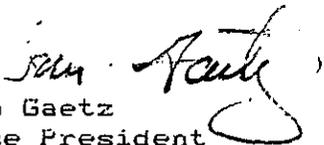
3
7
5
5
7
2
9

As indicated in the narrative of the proposal, accelerating the contract does certainly carry risk. We have attempted to quantify the impact of those risks by making allowances in the proposal. However, they are only an allowance with the eventual possibility of the obstacle being insurmountable.

Note that this proposal updates the cost and pricing data for the extended overhead portion associated with Change Orders #07 and #11 related to the Diffusion Barrier / Break Material.

Please advise if you will need any further information or clarification.

Very truly yours,


Tom Gaetz
Vice President

JK/dbh

cc: JHK, HOF, HSW (w/o attachments)
JOF-DAMCO-->KEH
CQP #625

9112351304

DAVID A. MOWAT CO.
BELLEVUE WA

5/13/90
DAM00513

SUBJECT: Hanford Vaults
Acceleration Proposal

TABLE OF CONTENTS

I. SYNOPSIS.....

II. PROPOSAL.....
 Proposal Summary
 Proposal Narrative

ITEM A. INCREASED LABOR.....

ITEM B. ADMINISTRATIVE EXPENSE.....

ITEM C. EQUIPMENT.....

ITEM D. SUBCONTRACTORS.....

ITEM E. WINTER PROTECTION.....

GENERAL & ADMINISTRATIVE EXPENSE.....
 G&A Field Office
 G&A Home Office
 Bond & Insurance
 Non-Absorbed Home Office Expense

EXTENDED PERFORMANCE QUANTIFICATION.....

REFERENCE DATA.....
 1.0 Schedule Graphics
 2.0 Schedule Comparison
 3.0 Schedule Revisions
 4.0 Shift Production Comparison
 5.0 Activity Groups
 6.0 Suspension Analysis
 7.0 Composite Labor Rate

9 1 1 2 0 5 5 1 6 7 5

**KAISER
ENGINEERS
HANFORD**

RECEIVED

MAR 08 1990

DAVID A MOWAT CO.

KAISER ENGINEERS HANFORD COMPANY
POST OFFICE BOX 888
RICHLAND, WASHINGTON 99352
REG. NO. KAISEEH134BM

DAM-5162-102

March 8, 1990

David A. Mowat Company
Post Office Box 1369
Richland, Washington 99352

Gentlemen:

CONTRACT NO. KEH-5162 (B-714)
VAULT CONCRETE BASIN, SHELL, AND LEACHATE SUMP FOR GROUTED WASTE DISPOSAL
FACILITIES, 200-EAST AREA
HANFORD SITE, RICHLAND, WASHINGTON

CHANGE ORDER NO. 18

Please provide a proposal for accelerating the completion of Vault 102.
Your proposal should be based on completion of all work of Vault 102,
including punchlist items, by March 1, 1991.

The proposal must consider the following impacts:

1. All changes issued to date.
2. Allow ten work days due to weather delays on critical path activities.
3. Allow ten work days due to possible future changes.

Please contact me at your earliest convenience to discuss the work to be
accelerated and your strategy.

Sincerely,

J. H. Mortimer

J. H. Mortimer
Area Contract Manager

JHM:jag

cc: S. Briggs - WHC
A. Lassila - DOE

RECEIVED
MAR 08 1990
DAVID A MOWAT CO

JHK	① ✓
DBH	① ✓
HSW	① ✓
GD	① ✓
DLG	① ✓
	DLG-HOF ✓
FILE:	KEH → DAMCO ✓
	Cop # 625, Cop # 613 ✓

911220551675

DAVID A. MOWAT
BELLEVUE WA

5/2/90
DAM00502

SUBJECT: Hanford Vaults
Acceleration Proposal

Pursuant to the request by Kaiser Engineers, Hanford (KEH), the following report assesses the affect of David A. Mowat Co. Inc (Damco) accelerating the work on Vault #102 to complete by 3/1/91. At this point in time the completion of vault #102 is scheduled as shown on the delay schedule (Ref -01). In conjunction with the accelerated schedule, a meeting was held on 5/2/90 with Mowat supervisory staff and the major subcontractors to obtain their input to the revised schedule of work. This report reflects the impact of this input to the cost and time involved.

The schedule comparison (Ref.-2.0) relates the original schedule to the new accelerated schedule. To simplify the analysis, the schedule has been broken down into seven different groups of activities (Ref:-5.0). The comparison is based on working days. At the time of the comparison, vault #102 was increased by 18 working days due to change order #2 (8days) and the 10 working days for future contingency. Damco has been able to reduce the scheduled time by 17 working days. The net increase is 1 working day. This comparison indicates that 83 days would have to be picked up on the original schedule to complete by 3/1/91. To complete in the accelerated timeframe, the remaining activities would have to be completed over 40% faster.

911225157

Attached with this report is a graphic depiction of the three possible scenarios (Ref-1.0); the original schedule, the delayed schedule and the accelerated schedule. The Original Schedule depicts the original plan prior to the delay. The Delayed Schedule indicates where the work is projected to finish as a result of the delays incurred up to the start of the catch basin slab. The Accelerated Schedule indicates the sequence of events to attain a completion date for vault #102 of 3/1/91.

To meet this schedule, the other vaults will be accelerated in conjunction with vault #102. Vault #103 has to be backfilled concurrent with Vault #102. Furthermore, to maintain momentum for the trades, adjacent vaults will have to be worked in concert. Without the adjacent work areas there would be no continuous flow of activities.

One of the alternatives would be to increase the crew size. The cost effect would arise from the increase in supervision and equipment. The assessment of this alternative was discounted from the standpoint that the work areas can only handle a given crew and the original schedule was already optimized to a certain degree.

To shorten the time for completion the primary consideration was made by increasing the number of hours worked each week.

9112551608

To maximize this an analysis was made of working a double shift of 8 hours and working 7 days/week at 10 hours/day utilizing alternating shifts of 4 days/week at 10 hours/day. The primary problem with either of these methods is the overlapping shifts. In either scenario the crews are either inefficient for a period of time or corrective work has to be made to interject the work into the new shift. At the 7/10 rate there would only be one interface/week where in the double shift there would be an interface each day. The analysis indicates that the cost differential is within fifteen percent for either case, however, the 7/10 basis is more effective from a time standpoint (Ref-4.0). The reason for this is that there is a substantial premium cost expense but there are fewer interfaces and the exposure for rework.

Furthermore, the double-shift method is not cost effective for this project. The double shift method is more conducive to projects where there is considerable repetition such as tunneling or a project where the crews would be doing the same task each day. An example of this would be having the crew forming during the day and pouring concrete during the night shift. On this project the work performed by the previous shift is constantly changing.

The craft which has the most exposure during the acceleration is going to be the ironworkers. This craft will require large crews in one area. Because of the nature

9
1
1
2
2
5
5
1
3
6
9

of the work, it is difficult to open additional work areas out of sequence as other crafts complete the work activities to pour concrete. If the ironworkers are not able to maintain continuity in the flow of work there would be a breakdown in the momentum and further increase in the turnover ratios.

The downside risk to the acceleration is that, if there was a severe winter, it is possible that the Asphalt work might not be completed. The accelerated schedule is structured such that the activities would take place at the least beneficial time. The majority of the concrete work is taking place during the hottest time of the year and the asphalt work would take place during the coldest time of the year. It is conceivable that the schedule could be accelerated and the weather would be cold enough that the asphalt could not be placed in accordance with the specifications.

It is anticipated that, because of the different subcontractors and variety of work involved, there could be a combination of different work routines utilized. For example, it might be more beneficial for the liner contractor to work long days, (eg. 12 hrs/day) as opposed to long weeks (eg. 7 days/week). Another area could be during the backfill process where it might be more effective to do

911235170

the asphalt backfill during the day shift and the earth backfills on a night shift.

QUALIFICATIONS. There are many factors which could affect the outcome of this analysis. Any proposal would have to be predicated on several qualifications.

1. The acceleration will be a team effort and will require close work between all parties. KEH will have to cooperate with the General Contractor and various subcontractors to expedite the process including the correction of minor deficiencies.

2. KEH will expedite the decision making process. There will be a KEH representative available at all times with authority to authorize extra work. All RFI's will be responded to within 24 hours. All submittals will be reviewed and returned within 5 days. The disposition on the NCR will be made within 24 hours.

3. There will be no additional changes which will affect the critical path. (In excess of 10 days contingency)

4. Funding is in place and the payments will made as a function of the proration of the change order cost on the affected phased work items with bi-weekly progress payments.

91120251701

5. Payments will include amounts for the winter operation of the asphalt plant.

6. The erection of the reinforcing steel will take place on the vault slab during the cure time for the vault slab and wall reinforcing will continue at the walls immediately following the pouring of the previous lift.

7. The temperature requirements for the placement of the asphalt materials will be revised to allow placements at lower temperatures than specified.

8. The utilities in the roof backfill will be installed prior to the backfill materials, including asphalt, are in place.

9. KEH Inspection and testing will take place as required by the construction schedule. Any changes to the schedule will be made on a minimum of 4 hour notice. Any change in the shift sequence will be made with a minimum of 24 hour notice. All survey work will be done concurrent with the contract work.

10. The cure time for striping all forms will be reduced from 5 days/lift to 3 days/lift.

91120551702

CONCLUSION. The early completion date is feasible, however, it would come at a distinct premium. The analysis indicates that there would be an advantage of working 7 days/week versus double shifting the crews. The primary risk is that accelerating the schedule forces the work out of sequence with the concrete work being done during the hottest time of the year and the asphalt being completed during the coldest months. There is a possibility that the weather would preclude the completion of the project when the schedule allows.

The owner will have to decide if the premium differential of the acceleration out weighs the delay expense.

911215173

DAVID A. MOWAT
BELLEVUE WA

05/17/90
file:
DAH00430

PROJECT: HANFORD VAULTS

SUMMARY OF PROPOSAL ELEMENTS

		ACCELERATION
ITEM A.	INCREASED LABOR	\$501,323
	A-1 OVERTIME PREMIUM	\$263,349
	A-2 SHIFT OVERLAP EFFECT	\$95,763
	A-3 ORIENTATION EFFECT	\$25,201
	A-4 TEMPERATURE EFFECT	\$37,842
	A-5 SUPERVISION PREMIUM	\$43,975
	A-6 LEARNING CURVE	\$35,193
ITEM B.	OVERHEAD STAFF	\$824,962
ITEM C.	EQUIPMENT	\$795,133
ITEM D.	SUBCONTRACTORS	\$680,710
	MECHANICAL	500000
	ELECTRICAL	500000
	CONCRETE	1000000
	REINFORCING	324348
	ASPHALT	1000000
	LINER	9519
	INTERIOR COATING	4667
	EARTHWORK	42176
ITEM E.	WINTER PROTECTION	\$251,524
ITEM F.	CONTINGENCY	\$50,000
		=====
		\$3,103,652
ITEM G.	G&A EXPENSE @	
	FIELD OFFICE @ 0.00%	\$0
	HOME OFFICE @ 9.88%	\$306,641
		=====
		\$3,410,293
ITEM H.	PROFIT @ 10.00%	\$341,029
		=====
		\$3,751,322
ITEM I.	BOND & INSURANCE @ 1.30%	\$48,767
		=====
		\$3,800,089
ITEM J.	NON ABSORBED HOME OFFICE EXPENSE	
	@ DAYS X \$2,238 /DAY =	\$0
		=====
	TOTAL EXPENSE	\$3,800,089
ITEM K.	EXTENDED PERFORMANCE COST	DEDUCT \$748,986
		=====
	EXPENSE DIFFERENTIAL	\$3,051,103

91127331774

DAVID A. MOWAT CO.
BELLEVUE WA

5/8/90
DAM00508

SUBJECT: Hanford Vaults
Acceleration Proposal

PROPOSAL NARRATIVE

The following narrative describes the items contained in the proposal.

ITEM A. INCREASED LABOR. As a result of the acceleration there would be an increase in the cost of direct labor. The cost increase is broken down as follows.

A-1. OVERTIME PREMIUM. The proposal is structured on the basis of working 7 days/week at 10 hours/day. This method would utilize the alternating successive shifts of 4 days/week at 10 hours/day allowed under the Hanford Site Labor Agreement. This agreement provides a premium cost for the overtime, however it is mitigated by decreasing the overtime factors during the weekend. The "A" shift would incur 2 hours/day premium overtime for a total 8 hours of overtime at 1.5 times the normal rate or an additional 4 hours of equivalent straight time cost. The "B" shift would incur 2 hours/day for 2 days and 10 hours on Sunday for a total of 14 hours of overtime at 1.5 times the normal rate or an additional 7 hours of equivalent straight time cost. Although both shifts are working 40 hours/week and would alternate, the effect each week for 70 hours would be the same. Therefore, the equivalent payroll cost for working 70 hours would be the same as paying for 81 straight time hours

5
6
7
1
5
5
6
2
1
1
9

or a 15.71% premium. This premium expense is projected over the affected hours (Ref-4.0) at the composite rate (Ref-7.0).

A-2 SHIFT OVERLAP. In the case of either working 7 days @ 10 hours/day (7/10) or double shifting with 5 days with two shifts @ 8 hours/day (DBL-SFT), the shifts will interface. Working 7/10 would have one interface each week and the DBL-SFT would interface 5 times each week. This interface is the primary cause of inefficiency for multiple shifts. This inefficiency occurs as the effect of having different crews work on the same item of work which can cause a change in the technique or method of the preceding crew. The loss of efficiency results from the relearning or remobilizing of activities or from rework of the preceding work to conform with the new process. The calculation is derived by multiplying the number of overlaps each week times the number of men in the crew times the estimated number of hours that the crew is affected. The effect ratio is calculated by dividing the total affected hours by the number of crew hours in the week. The total expense is calculated by multiplying this percentage times the total affected crew hours (Ref-4.0) at the composite rate (Ref-7.0).

9 1 1 2 7 5 5 1 7 0 6

A-3 PERSONNEL ORIENTATION. During construction of any project it is a well known fact that considerable turnover of building trades personnel is experienced. Accordingly, it is inevitable that a period of lost production for workmen orientation is experienced each time personnel orientation occurs. Because of the increased number of people required by the acceleration, there would be a corresponding increase in the cost of bringing these men onto the project. These costs are real and therefore must be included as an hourly charge for each actual production hour. The calculation is based on three turnovers to reach 2000 hours of production annually. This equates to 667 hours/worker. The lost time is calculated as follows;

-Initial hire, badging travel to site	3.0 hrs
-Lost production due to orientation efficiency	
First Day	2.0 hrs
Second Day	1.0 hrs
Third Day	0.5 hrs
-Termination Loss	2.0 hrs
	=====
Total Lost Time	8.5 hrs

The loss percentage is calculated as the lost time divided by the hours/worker. The expense is calculated as the loss percentage times the affected hours (Ref-4.0) at the composite labor rate (Ref-7.0).

In addition, it is anticipated that there will be a percentage of badges that will be lost or not returned at

91127551707

termination and this amount is added to obtain the total orientation expense.

A-4 TEMPERATURE EFFECT. As a result of the delay in starting work, there will be a significant increase in the number of hours that will be worked during the hottest months of the year (Ref A-4.3). Based on studies by the National Electrical Contractors Association, productivity decreases significantly when the temperature goes above 80 degrees. During the months of June through September the average temperature is over 90 degrees (Ref: A-4.1). It should be noted that since this project is being constructed in an significantly deep excavation, the temperature at the work area will be higher than the surrounding area. No temperature differential is available at this time and therefore 90 degrees is used as the average temperature for these months. The calculation is also adjusted to account for the lower temperature before 10 a.m. The aggregate effect is calculated by multiplying the amount of affected hours times the temperature effect based on the NECA studies (Ref: A-4.2). The aggregate effect is then applied to the total hours affected at the composite labor rate (Ref-7.0).

A-5. SUPERVISION PREMIUM. As a result of the multiple shifts, the cost of supervising the workers would increase over the cost of a normal 40 hour work week. As indicated in item A-2, the problem with multiple shifts arises from

9112051708

the interface of the shifts. To mitigate this affect the foreman or supervisor is brought on to the site one day prior to the crew starting to review the status of the ongoing work. Bringing these people on creates a premium expense to the amount of direct work taking place. Although there are fewer interfaces with the 7/10 shifts, the Hanford Site Agreement requires that the foreman has to be paid for a full day. This factor tends to minimize the affect of the increased number of interfaces with the DBL-SFT method. The calculation is made by multiplying the overlaps each week times the number of equivalent foreman hours. This derives the additional equivalent straight time hours of supervision work for the week. The total number of hours for the week is calculated by multiplying the number of people in the crew times the number of hours worked. The number of added supervision hours is then compared with the amount of crew hours worked to obtain the premium effect percentage. The percentage effect is applied to the total affected hours (Ref-4.0) at the carpenter foreman rate.

A-6. LEARNING CURVE. Every project experiences a learning curve which increases the productivity as the crews repeat the tasks of a given activity. The accelerated schedule requires that there will be additional people added to the crew that would not have been hired if the schedule was not accelerated. It is projected that the crew is 50% efficient for the first week, 70% efficient the second week and 90%

911235179

efficient the third week. The cost is derived by calculating the lost time for the first three weeks for the additional crew on the basis of one man times the anticipated number of men in the crew.

ITEM B. JOBSITE ADMINISTRATIVE EXPENSE. The acceleration of the project will require additional supervision and administrative support for direct production.

B-1. OVERHEAD STAFF. The plan would be to increase the overhead staff support with a combination of two alternatives. The first method is to add additional people to the staff. The second method would be to increase the amount of overtime worked each week for the people involved. The matrix indicates the combination and hours worked for each position. The overtime rate is converted to an equivalent straight time basis.

B-2. SUBSISTENCE. It is anticipated that the increased staff would be supplemented with people that would have to be housed during the acceleration phase. This is calculated by multiplying the number of people times the anticipated expense of food and housing.

B-3. TOTAL OVERHEAD EXPENSE. The total overhead expense is calculated as the total of B-1 and B-2 times the period of acceleration.

B-4. CONSULTANT EXPENSE. The preparation of the cost proposal required the input of consultants. The estimated cost of these consultants is identified within the proposal.

9112131710

B-5. PAYROLL EXPENSE. In addition to the payroll clerk noted in item B-1, computer equipment and courier service is added to account for the irregular payroll requirements which would be handled on site.

B-6. FINANCE COST. As a result of the increased cost, an amount is added to account for the debt service.

B-7. TOTAL ADMINISTRATIVE EXPENSE. The total expense is the cumulative total of item B-3 through B-6.

ITEM C. MATERIAL AND EQUIPMENT. The following items explain the additional material and equipment that would be required to accelerate the project.

C-1. HOISTING. It is anticipated that the acceleration will require additional hoisting equipment to maintain the pace of work. The proposal is based on having one additional crane in the work area and one additional crane in the storage area which would be available at the work area. The rate is based on the bluebook rental rates (Ref C-1.1) and the hours are based on 70 hours/week. The operating expense is calculated at 80% utilization. The operator and oilers are included for each crane.

C-2 LIGHT PLANT. As a result of the longer work day, it would be necessary to have portable light plants to keep the work areas lighted. The rate is based on the bluebook rental rates and the hours are based on 70 hours/week. The operating expense is calculated at 3 hours/day or 30% utilization.

91120551711

C-3 MISCELLANEOUS EQUIPMENT. Additional general types of equipment will be required to support the direct work. The rate is based on the bluebook rental rates and the hours are based on 70 hours/week. The operating expense is calculated at 80% utilization. A teamster is included to account for expediting parts and materials.

C-4 EQUIPMENT @ REBAR INSTALLATION. To accelerate the installation of the reinforcing steel it is anticipated that more scaffold equipment and additional crimpers for splicing will be required.

C-5 HOT WEATHER CONCRETE. The accelerated schedule will cause an increase in the amount of concrete that will be poured during the hot months of June through September (Ref C-5.1). To maintain the concrete temperature the concrete supplier must provide additives to chill the material which is provided at a premium price. The additional cost is for the amount provided on the accelerated schedule versus the original schedule.

C-6. ADDITIONAL FORM MATERIAL. To maintain the momentum of the project it will be necessary to start work in vaults 104 and 105. To have these vaults available it will be necessary to build additional forms. In the original plan it was anticipated that the forms from the first vaults would be available and reused for the next set.

9112751712

C-7. EXPENDABLE TOOLS AND SUPPLIES. The accelerated schedule has created a loss of efficiency which was not anticipated under the original contract. As a result, the hours expended has increased. With each increased hour there is a corresponding increase in the tools and expendable supplies related to the additional hours. Examples of these costs would be drill motors, extension cords, ladders, hard hats, and misc safety supplies. The cost is derived as a percentage of the additional incurred hours (Ref-4.0).

C-8. RENTAL EQUIPMENT CONTINGENCY. An amount is included to account for extraordinary expenses related to the equipment such as stand-by over weekends or maintenance repairs at premium times. The amount is calculated at 10% times the added equipment rental value.

ITEM D. SUBCONTRACTORS. In addition to the work by the general contractor, certain activities will be carried out by subcontractors that will also be accelerated. Copies of the subcontractor proposals are attached for consideration. As noted in the various proposals, the subcontractors have qualified their quotation. As such, the costs indicated reflect an estimate for the subcontractor work.

ITEM E. WINTER PROTECTION. As a result of the acceleration, there would be activities taking place in the winter months which would require protection from the elements. The costs provides covers for two vaults only.

9 4 1 2 0 5 1 7 1 3

E-1. GROUND THAWING. It is anticipated that the ground and previous lifts will have to be thawed and ice removed. The plan would be to use kerosine weed burners applied manually.

E-2. ERECT AND DISMANTLE COVERS. The costs are estimated to construct covers over the asphalt backfill areas. These covers would be relocated as the backfill is placed.

E-3. EQUIPMENT. The cranes would be used to erect and relocate the units. To maintain the ambient air temperature the tented areas would be heated with gas fired space heaters during the timeframe of backfill.

E-4. MATERIALS. This item accounts for the amount of materials to construct frames and tarps for the covers.

E-5. INTERIOR COATING SUPPORT. As noted on the proposal for the accelerated interior coating, support service would be supplied by the general contractor. An allowance is provided to account for temporary covers, heat and ventilation.

ITEM F. CONTINGENCY. Because of the many unknown factors, a contingency has been established to account for the additional expense. Events which could lead to the expenditure of amounts beyond the outlined activities would include; overtime premium, additional cranes or hoisting equipment, subsistence or other expense extended beyond the original considerations. Several of the subcontractors have qualified their proposal which creates a degree of risk for

9112001714

the general contractor. The quantification of the contingency is calculated at a lump sum of \$50,000.

ITEM G. G&A EXPENSE. The general and administrative expense is calculated based on the history of previous projects as delineated on the attached accounting data (Ref G&A). Since the overhead staff is included separately, no field office cost is incurred as a line item percentage.

ITEM H. PROFIT. Profit is calculated at 10 percent of the direct cost.

ITEM I. BOND AND INSURANCE. The bond and insurance expense is a function of contract revenue. Supporting documentation is attached (Ref G&A).

ITEM J. NON-ABSORBED HOME OFFICE EXPENSE If the project is accelerated and completes in the original time frame, there would be no expense for the extended non-absorbed home office expense. Reference is made to schedule 6 in the general and administrative section.

ITEM K. EXTENDED PERFORMANCE COST. The data related to the increased cost details are contained in the section on extended performance. If the project is accelerated and completes in the original time frame the cost related to the delay would be mitigated. At this point in time the project has been delayed and the contractor has incurred cost increases. If the project is accelerated the cost of the acceleration would be offset by the amount that would be incurred as a result of the delay. Item "V" related to non-

9112051715

absorbed home office expense is included on schedule 6 in the section on general and administrative expense.

The time of extended performance is due to the suspension of work and related changes to the Diffusion Barrier (CO #07) and Diffusion Break (CO #11) materials. Reference is made to Ref-6.0. The time is calculated as it relates to activity #850 and #860. Activity #860, which affects the critical path, has been delayed 126 calendar days (90 working days) as shown by comparing the original schedule to the delay schedule.

91120551716

DAVID A. MOWAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

ITEM A. LABOR EXPENSE

A-1 ALTERNATING 4/10 SHIFTS

	SHIFT "A"	SHIFT "B"
S/T	32	16
O/T	8	14
PREMIUM	4	7

EQUIV HRS	44	37
EQUIVALENT HRS		81
WORK HRS		70
PREMIUM EFFECT		15.71%
AFFECTED HOURS		62000
RATE		\$27.03
EXPENSE		\$263,349

A-2 SHIFT OVERLAP

	7/10	DBL-SFT

OVERLAP/WEEK	1	5
CREW SIZE	20	20
HRS/OVERLAP	4	3
AFFECTED HOURS	80	300
HRS/WEEK	1400	1600
EFFECT	5.71%	18.75%
HOURS	62000	69728
COMPOSITE RATE	\$27.03	\$27.03
EXPENSE	\$95,763	\$353,390

A-3 PERSONEL ORIENTAION

ANNUAL PRODUCTION	2000	
TURNOVERS	3	
MHRS/WORKER	666.67	
LOST TIME	8.5	
LOST TIME RATIO	1.28%	1.28%
HOURS	62000	69728
RATE	\$27.03	\$27.03
EXPENSE	\$21,451	\$24,031
BADGE LOSS	\$250.00 /UNIT	
LOST UNITS	15 EA	
BADGE EXPENSE	\$3,750	\$3,750
TOTAL EXPENSE	\$25,201	\$27,781

91120551717

DAVID A. HOWAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

ITEM A. LABOR EXPENSE

A-4 TEMPERATURE EFFECT

TOTAL HOURS	30000		
ORIGINAL SCHED	10000		
AFFECTED HOURS	20000		
AFTER 10 AM	14000		
AFFECTED HOURS	70.00%		
TEMP AFFECT	10.00%		
AGGRE EFFECT		7.00%	7.00%
HOURS	20000	20000	
RATE	\$27.03	\$27.03	
EXPENSE	\$37,842	\$37,842	

A-5 SUPERVISION PREMIUM

	7/10	DBL-SFT	
OVERLAP/WEEK	1	5	
FOREMAN			
HRS REQD	8	4	
PREMIUM HRS	4	2	
EQUIVALENT S/T HOURS	12	6	
ADDED FOREMAN HRS/WK	12	30	
CREW SIZE	7	7	
HRS/WEEK	70	80	
AFFECTED HOURS	490	560	
EFFECT	2.45%	5.36%	
HOURS	62000	69728	
RATE	\$28.95	\$28.95	
EXPENSE	\$43,975	\$108,141	

91120551713

DAVID A. MOWAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

ITEM A. INCREASED LABOR

A-6	LEARNING CURVE	
		HRS LOST
	WEEK ONE	35 HRS/MAN
	WEEK TWO	20 HRS/MAN
	WEEK THREE	10 HRS/MAN

	TOTAL HOURS LOST	65 HRS/MAN
	ADDL CREW SIZE	20 MEN
	HOURS LOST	1300 HRS
	COMPOSITE RATE	62000 MHRS
	PERCENTAGE EFFECT	2.10%
	COMPOSITE RATE	\$27.03 /MHR
	TOTAL EXPENSE	\$35,193

A-7	CUMULATIVE EFFECT	7/10	DBL-SFT
		34.26%	34.48%
	EXPENSE	\$501,323	\$562,346

91120551719

JOB 250 - WAGE RATES

4/18/1990

CRAFT/NAME	HRLY WAGE	UNION BENES	FICA 7.65x	UNEMPL 6.12x	MED AID	PLPD 8.35x	TRAVEL PAY	KCMDS	TOTAL	O.T. RATE	O.T. ADJUST
CARPENTER FOREMAN	18.07	3.69	1.302	1.106	1.947	1.509	1.25		28.95	38.74	9.78
CARPENTER	17.07	3.69	1.306	1.045	1.947	1.425	1.25		27.73	36.91	9.17
CARPENTER APPR - 1ST	10.24	3.69	.783	.627	1.947	.855	1.25		19.39	24.39	5.00
CARPENTER APPR - 3RD	11.95	3.69	.914	.731	1.947	.998	1.25		21.48	27.53	6.05
CARPENTER APPR - 4TH	12.80	3.69	.979	.783	1.947	1.069	1.25		22.52	29.08	6.57
CARPENTER APPR - 6TH	14.51	3.69	1.110	.888	1.947	1.212	1.25		24.61	32.22	7.61
CARPENTER APPR - 8TH	16.22	3.69	1.241	.993	1.947	1.354	1.25		26.70	35.35	8.65
PILEBUCK	17.07	3.69	1.306	1.045	1.947	1.425	1.25		27.73	36.91	9.17
LABORER FOREMAN	15.17	3.37	1.161	.928	1.947	1.267	1.25		25.09	33.11	8.01
LABORER - GR 1	14.10	3.37	1.079	.863	1.947	1.177	1.25		23.79	31.15	7.36
LABORER - GR 2	14.34	3.37	1.097	.878	1.947	1.197	1.25		24.08	31.59	7.51
MASON FOREMAN	16.92	3.90	1.294	1.036	1.947	1.413	1.25		27.76	36.64	9.08
CEMENT MASON	15.92	3.90	1.218	.974	1.947	1.329	1.25		26.54	35.01	8.47
OPERATOR - GR 7	16.43	4.35	1.257	1.006	1.947	1.372	1.25		27.61	36.39	8.78
OPERATOR - GR 8	17.43	4.35	1.333	1.067	1.947	1.455	1.25		28.83	38.23	9.39
IRONWORKER FOREMAN	19.92	4.91	1.524	1.219	1.947	1.663	1.25		32.43	43.35	10.91
IRONWORKER	18.42	4.91	1.409	1.127	1.947	1.538	1.25		30.60	40.60	10.00
TEAMSTER - GR 13	16.03	3.85	1.287	1.030	1.947	1.405	1.25		27.60	36.63	9.03
MIKE BUTLER	18.01	4.35	1.439	1.151	1.947	1.571	1.25		30.52	40.75	10.24
GLEN DAVISON	27.50	3.69	2.104	1.683	1.947	2.296			39.22	56.01	16.79
JIM KELLER	29.38		2.247	1.798	2.306	2.453		2.63	40.81	58.75	17.94
DENNIS HOLLIS	20.00		1.530	1.224	2.306	1.670		1.72	28.45	40.67	12.21
DENNIS GUNDERSON	25.00		1.913	1.530	2.306	2.088		2.62	35.45	50.72	15.27
SAM WELLENBROCK	21.25		1.626	1.301	2.306	1.774		1.72	29.98	42.96	12.98
TOM CLARKE	16.75		1.281	1.025	2.306	1.399			22.76	32.99	10.23
JACKIE WEBB	7.50		.574	.459	2.306	.626			11.47	16.04	4.58

REF A-1.1

Table 2 continued:

Station	Data	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Zindel	Av. Max.	42	47	60	70	76	84	92	92	82	70	53	44	68
	Av. Min.	28	31	37	42	48	56	65	63	53	44	35	30	44
	Mean	35	39	49	56	62	70	79	78	68	57	44	37	56
	Highest	64	67	83	95	101	104	112	111	102	94	75	63	112
	Lowest	-12	0	10	29	33	41	50	40	35	25	16	11	-12
BENTON COUNTY														
Benton City 2NW	Av. Max.	38	45	57	68	76	83	91	89	81	68	50	42	66
	Av. Min.	23	26	32	38	45	51	56	53	48	39	31	27	39
	Mean	31	36	45	53	61	67	74	71	65	54	41	35	53
	Highest	67	72	84	93	103	105	109	105	103	92	75	68	109
	Lowest	-21	-23	8	17	28	34	38	36	31	11	-4	-11	-23
*Bickleton	Av. Max.	34	39	46	57	65	72	82	81	73	60	44	38	58
	Av. Min.	20	25	29	35	42	47	53	53	48	39	29	25	37
	Mean	27	32	38	46	54	60	68	67	61	50	37	32	48
	Highest	59	61	70	81	90	97	102	100	96	85	69	65	102
	Lowest	-13	-11	1	13	20	31	34	34	27	9	-6	-3	-13
Hanford	Av. Max.	39	45	59	70	79	86	95	92	82	69	50	43	67
	Av. Min.	23	24	32	39	46	53	58	55	48	39	29	27	40
	Mean	31	35	46	55	63	70	77	74	65	54	40	35	54
	Highest	65	70	82	95	103	107	115	107	101	90	73	68	115
	Lowest	-23	-12	14	12	29	33	41	41	30	6	0	-8	-23
Kennewick	Av. Max.	39	46	58	68	77	83	91	88	80	66	50	42	66
	Av. Min.	25	29	35	41	48	54	59	57	49	41	33	30	42
	Mean	32	38	47	55	63	69	75	73	65	54	42	36	54
	Highest	64	71	82	94	102	106	115	106	100	89	76	68	115
	Lowest	-19	-23	10	18	30	37	43	40	30	14	0	-8	-23
Kennewick 10SW	Av. Max.	35	43	51	62	71	78	89	86	78	62	46	39	62
	Av. Min.	24	28	32	38	45	51	58	57	52	42	31	27	41
	Mean	30	36	42	50	58	65	74	72	65	52	39	33	52
	Highest	58	62	77	83	95	105	107	111	100	87	67	60	111
	Lowest	-17	-8	9	24	25	36	43	42	32	25	-4	0	-17

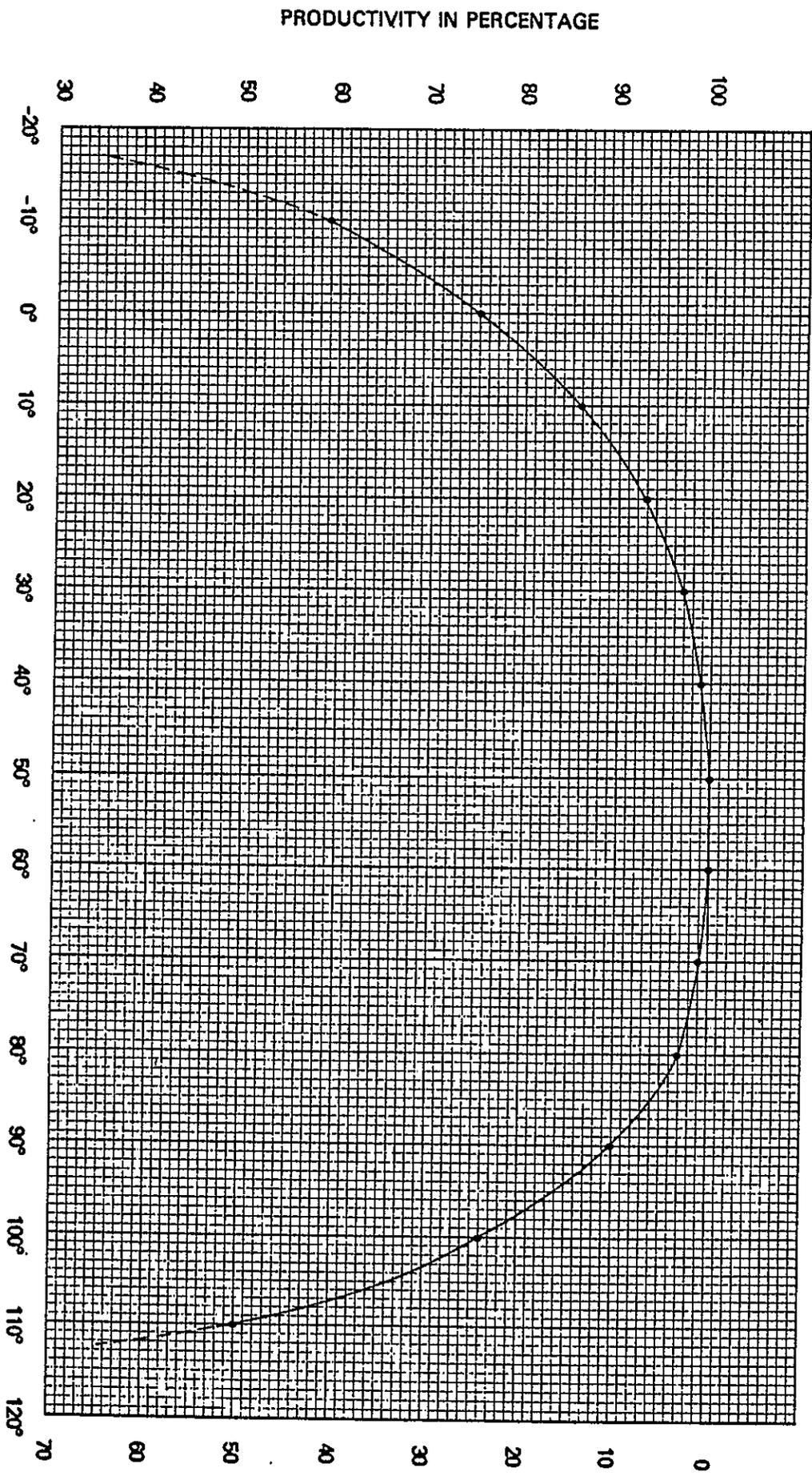
REF A-4.I

Table 6
JOURNEYMEN PRODUCTIVITY AT
70 PERCENT RELATIVE HUMIDITY

Effective Temperature	Productivity	Loss of Productivity
-20° F	? %	? %
-10° F	59 %	41 %
0° F	75 %	25 %
10° F	86 %	14 %
20° F	93 %	7 %
30° F	97 %	3 %
40° F	99 %	1 %
50° F	100 %	0 %
60° F	100 %	0 %
70° F	100 %	0 %
80° F	97 %	3 %
90° F	90 %	10 %
100° F	76 %	24 %
110° F	50 %	50 %
120° F	? %	? %

REF A-4.2.0

Chart 6
70% RELATIVE HUMIDITY



LOSS OF PRODUCTIVITY IN PERCENTAGE

REF A-4.2.1

911255173

9 1 1 2 5 5 1 7 2 6

	Rate	FICA	Unempl	Med. Aid	BSPD .0906	KCBS	Subsis	Union	Total Per Week	Per Day
F Project Manager	117500	8989	7285	9224	10594	9540			187600	37520
A Office Engineer	80000	6120	4960	9224	7213	6250			113767	22753
G Field Engineer	100000	7650	6200	9224	9016	9540			141630	28326
W QA Chief	85000	6503	5270	9224	7664	6250			119911	23982
QA Assist	67000	5126	4194	9224	6041	2811			94356	18871
W QA Clerk	30000	2295	1860	9224	2705	6100			52184	10437
Superintendent	110000	8415	6820	7789	9918		14760		157702	31540
✓ (pre 1-21-70)	95000	7268	5890	7789	8565		15000	14760	154272	30854

* INCREASED RATE 15% TO REFLECT PENSION PLAN
EXCLUDE SUPERINTENDENT (REF B-1.2)

REF B-1.1

THORESON & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS
110 WEST DAYTON, SUITE 201
EDMONDS, WASHINGTON 98020

(206) 288-3086
FAX (206) 624-1954

May 15, 1990

Mr. Thomas W. Gaetz
David A. Mowat Company
P.O. Box 1201
Bellevue, Washington 98009

Dear Tom,

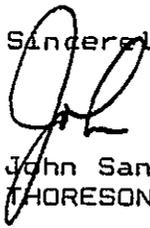
The David A. Mowat Company maintains a Profit sharing Plan for all of its employees that are neither subject to a collective bargaining agreement or paid on an hourly basis. An employee that is eligible to participate must have completed two years of service with at least 1,000 hours worked in each year.

Currently you have three employees at your Hanford job that are or will become eligible for participation in the plan.

Contributions to the plan have approximated 15% of eligible compensation for each of the last three years. For budgeting purposes I suggest that you allow for this additional payroll burden item for each of your selected employees at the Hanford site.

If I may be of further assistance please let me know.

Sincerely,


John Sandstrom
THORESON & COMPANY

JS/erh:135.2

9112055177

REF B-1.2

MARE ASSOCIATES
14024 N.E. Sixth
BELLEVUE, WASHINGTON 98007

MEMO

(206) 746-2596

TO DAVID MOWAT CO
ATTN: Tom GAETZ

DATE	5/14/90
SUBJECT	HANFORD VAULTS

ESTIMATED COST OF COST ENGINEERING
RELATED TO ACCELERATION

TO DATE	70 HRS @ 65 ^W /HR	= 4550 ^W
TO COMPLETE		= 5450 ^W
		<u>\$ 10,000^W</u>

PLEASE REPLY NO REPLY NECESSARY

SIGNED

REF B-4.1

THORESON & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS
110 WEST DAYTON, SUITE 201
EDMONDS, WASHINGTON 98020

(206) 285-3088
FAX (206) 624-1984

May 15, 1990

Mr. Thomas W. Gaetz
David A. Mowat Company
P.O. Box 1201
Bellevue, Washington 98009

Dear Tom,

At your request, below is a cost projection for the accounting services that will be required to accomplish the F.A.R.S. evaluation, as it relates to your Hanford - Vault Concrete Basin project.

Costs expended thru 4-27-90	\$3,528
Anticipated Cost to complete [20 hrs. @ \$84/]	\$1,680
	<hr/>
	<u>\$5,208</u>

If I may be of further assistance please let me know at your earliest convenience.

Sincerely,


John Sandstrom
THORESON & COMPANY

JS/erh:135.1

REF B-4.2

6
2
1
5
5
3
2
0
1
1
6

DAVID A. MOWAT
 BELLEVUE WA

PROJECT: HANFORD VAULTS

05/16/90
 file:
 DAM00430

ITEM C. MATERIAL & EQUIPMENT

	OPERATING RATE		OWNSHP RATE	TOTAL RATE	HOURS	AMOUNT
	FULL	EFFECTIVE				
C-1 HOISTING						
06/01/90 THROUGH 11/01/90						
22 WEEKS @ 70 HRS/WK						
1 CRANE 70-TON	\$29.15	\$23.32	\$61.10	\$84.42	1540	130,007
1 CRANE 40-TON HYD	\$28.90	\$23.12	\$50.30	\$73.42	1540	113,067
2 OPERATORS	--	--	--	\$28.83	1540	88,796
2 OILERS	--	--	--	\$23.79	1540	73,273
C-2 LIGHT PLANT						
10/01/90 THROUGH 02/25/91						
21 WEEKS @ 70 HRS/WK						
10 UNITS	\$3.90	\$1.17	\$4.00	\$5.17	1470	75,999
C-3 MISC EQUIPMENT						
06/01/90 THROUGH 02/25/91						
38 WEEKS @ 70 HRS/WK						
2 COMPRESSORS 185 CFM	\$3.90	\$3.12	\$3.90	\$7.02	2660	37,346
3 PICK-UP TRUCKS	\$3.90	\$3.12	\$2.80	\$5.92	2660	47,242
3 SANIKANS				\$2.00	2660	15,960
1 SNORKEL LIFT- 60 FT	\$1.30	\$1.04	\$5.00	\$6.04	2660	16,066
4 TEMPOWER UNITS				\$1.00	2660	10,640
1 TEAMSTER				\$27.60	2660	73,416
C-4 EQUIPMENT @ REBAR						
SCAFFOLD EQUIPMENT					ALLOWANCE	10,000
2 SPLICE CRIMPERS @	\$500.00 /MONTH X		5.00 MONTHS =			5,000
C-5 HOT WEATHER CONCRETE						
TOTAL JUN-JUL-AUG-SEP CONC	12179 CY					
DEDUCT ORIGINAL PLAN	7129 CY					
AFFECTED CONC	5050 CY @		\$4.11 /CY			20,756
C-6 ADDITIONAL FORM MATL						17,500
CB FORMS (SF)	7000 SF					
EXPENSE RATE	\$2.50 /SF					
C-7 EXPENDABLE TOOLS & SUPPLIES						8,091
TOTAL AFFECTED HOURS	62000 MHRS					
EFFICIENCY LOSS	16.09%					
LOST HOURS	9978 MHRS					
COMPOSITE RATE	\$27.03 /MHR					
EXPENDABLE FACTOR	3.00%					
C-8 EQUIPMENT RENTAL CONTINGENCY						
\$519,743 EQUIPMENT VALUE @			10.00%			51,974
C-9 TOTAL EQUIPMENT & MATERIAL						\$ 795,133

9112035170

EQUIPMENT RENTAL RATES

4/17/1990

DESCRIPTION		RENTAL RATE BLUE BOOK				HOURLY RATES					
#1	EQUIPMENT TYPE	MANUFACTURER	MODEL/CAPACITY	CODE	SECT	PRICE	Monthly Factor	Region	Monthly Rate	10 per Cost	Working
?	FORCLIFT	1979 WIGGINS	MODEL MLC79 - 822016/23ft	1	131	681 5951	.9191	1.051	3.30	6.65	10.20
901	ROUGH TERRAIN CRANE	1980 P & H	MODEL 40 - 40 TON	1	131	251 9,2501	.9111	1.051	50.30	28.90	79.20
923	TRUCK CRANE	1975 P & H	MODEL 670 - 70 TON	1	131	591 11,9351	.8541	1.051	61.10	29.15	92.20
586	SEMI TRACTOR	1972 INTERNATIONAL	318 DIESEL/6x4/55-75,000	1	201	271 2,9851	.6881	1.051	12.30	14.85	27.20
808	FLATBED TRAILER	1970 TRAILMOBILE	40 FOOT	1	1	1	3001	1.0001	1.00	2.20	4.00
750	COMPRESSOR	1987 LEROI	185 CFM	1	31	31 6701	.9801	1.051	3.90	3.00	7.70
942	IVAN TRAILER	1963 FRIEDRUF	40 FOOT	1	W1	201 2301	.7421	1.051	.90	.65	1.50
675	BACKHOE/LOADER	1980 FORD	MODEL 555A	1	91	841 1,8641	.8951	1.051	9.90	5.95	15.90
611	BOXTRUCK	1975 FORD	LNT 260	1	201	291 2,1851	.7201	1.051	9.00	9.15	18.20
	CRANE	NATIONAL	12 TON	1	131	341 8401	.8851	1.051	4.00	3.10	7.10
536	PICKUP (GD)	1990 FORD	3/4 TON F250	1	201	321 4651	1.0001	1.051	2.80	3.90	6.70
519	PICKUP (GD)	1988 FORD	3/4 TON F250	1	201	321 5651	.9711	1.051	3.30	1.75	5.10
500	PICKUP (JK)	1986 FORD	3/4 TON F250	1	201	321 4651	.9401	1.051	2.60	3.90	6.50
513	PICKUP (KH)	1989 FORD	1/2 TON F150	1	201	321 3901	1.0001	1.051	2.30	3.65	6.00
517	PICKUP (SW)	1983 FORD	1/2 TON F150	1	201	321 3901	.8851	1.051	2.10	3.65	5.80
856	OFFICE TRAILER	1977 COMMODORE	12 X 60	1	DUOTED	1	3001	1.0001	1.00	1.00	2.00
7	OFFICE TRAILER	1980 CLIFF	12 X 60	1	DUOTED	1	3501	1.0001	2.10	1.00	3.10
858	LUNCH TRAILER	1984 WESTWOOD	10 X 30	1	W1	201 1851	.7421	1.051	.80	.60	1.40
508	FLATBED TRUCK W/DUMP	1968 CHEVROLET	SINGLE AXLE - 10,200 GVW	1	201	281 7751	.6641	1.051	3.10	8.15	11.30
878	WATER TANK TRAILER	UNKNOWN	500 GAL	1	191	221 2641	.8061	1.051	1.30	3.25	4.60
891	CONCRETE SAW	1988 TARGET	65 HP - 36"	1	1	1	9501	.9001	5.40	5.60	11.00
ENT	WALK BEHIND ROLLER	1989 WACKER	M7A - DD VIBRATORY	1	1	1	9551	1.0001	5.70	1.30	7.00
ENT	PLATE COMPACTOR	1989 MIKASA	MVC-90L - 5 HP	1	1	1	1501	1.0001	.90	.55	1.50
				1	1	1	1	1.051			
				1	1	1	1	1.051			
				1	1	1	1	1.051			
				1	1	1	1	1.051			
				1	1	1	1	1.051			

REF C-1.1

HOISTS & DERRICKS

I.C. SELF PROPELLED TELESCOPIC BOOM AERIAL LIFTS

Model (Yr. Disc.)	Max. Pft. Hght.	Max. Lft. Capy.	Platform Sz.	HP	Monthly	Weekly	Daily	Hourly	Estimated Operating Cost/Hr.
Gasoline Powered (Cont.)									
GROVE (MANLIFT) (Cont.)									
MZ46A (1987)	40'0"	500 lbs	42" X 72"	37.0	\$2,410.00	\$675.00	\$170.00	\$28.00	\$4.70
MZ48B	42'0"	800 lbs	38" X 60"	30.0	2,675.00	750.00	190.00	29.00	4.65
MZ48B	42'0"	600 lbs	38" X 60"	30.0	2,720.00	780.00	190.00	29.00	4.70
MZ50 (1984)	44'0"	1,000 lbs	42" X 72"	30.0	2,850.00	740.00	185.00	28.00	4.75
MZ150 (1988)	44'0"	800 lbs	38" X 40"	37.0	2,820.00	790.00	200.00	30.00	5.05
MZ150B	44'0"	800 lbs	36" X 60"	30.0	2,900.00	810.00	205.00	31.00	4.80
MZ58 (1988)	50'0"	1,000 lbs	42" X 72"	37.0	3,085.00	885.00	215.00	32.00	5.25
MZ68 (1984)	60'0"	500 lbs	38" X 72"	30.0	3,125.00	875.00	220.00	33.00	5.50
MZ68A	68'0"	500 lbs	42" X 72"	62.0	3,835.00	1,075.00	270.00	41.00	7.00
MZ66B	60'0"	500 lbs	38" X 60"	37.0	3,555.00	995.00	250.00	38.00	5.90
MZ78	70'0"	800 lbs	42" X 72"	62.0	4,725.00	1,325.00	330.00	50.00	7.55
MZ90	84'0"	750 lbs	42" X 72"	62.0	5,875.00	1,645.00	410.00	62.00	9.70
MZ118 (1988)	110'0"	700 lbs	38" X 60"	62.0	7,800.00	2,130.00	535.00	80.00	13.35
MZ118B	110'0"	700 lbs	38" X 60"	62.0	7,785.00	2,180.00	545.00	82.00	13.35

© 1989 Dataquest Incorporated

(May not be reprinted or copied in whole or part, in paper, electronic or any other form without written permission from Dataquest.)
Rental Rate Blue Book, Vol. 1

9/89

§12-26

\$ 3125⁰⁰/mo
@ 176 hrs = \$ 17⁷⁵/hr.

REF C-1.2

91121351772

PURCHASE ORDER

DAVID A. MOWAT COMPANY
 GENERAL CONTRACTORS
 P.O. BOX 1201
 BELLEVUE, WASHINGTON 98009
 TELEPHONE (206) 747-7393
 FAX (206) 641-8588

TO: BARSPLICE PRODUCTS INC.
PO BOX 31308
DAYTON, OH 45431
513-252-3456
 TELEPHONE _____
 CONTACT: CAL BILLET

SHIP TO GROUTED WASTE
DISPOSAL AREA
200 AREA
HANFORD, WA 99352
509-372-2850
 TELEPHONE _____

FURNISH THE FOLLOWING MATERIALS AND/OR SERVICES IN STRICT ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS, INCLUDING ADDENDA NOS. 1, 2, 3, 4 AND 5 FOR THE CONSTRUCTION OF THE GROUT WASTE FACILITY, CONTRACT NO. KEH-5162(B-714). NOTE 1

DATE	DELVY DAT	SHIP VIA	F.O.B	TERMS	P.O. NO.
12/11/89	AS REQD. Note 2	TRUCK	DAYTON	NET 30	250-6

APROX QTY	DESCRIPTION	PRICE	AMOUNT
	FURNISHING MECHANICAL REBAR COUPLERS:		
	PHASE III		
	(k) VAULT 102 WALLS		
1,563/EA	#11 BAR-GRIP COUPLERS	\$10.70	\$16,718.75
2,150/EA	#10 BAR-GRIP COUPLERS	\$9.20	\$19,780.00
	(l) VAULT 103 WALLS		
1,563/EA	#11 BAR-GRIP COUPLERS	\$10.70	\$16,718.75
2,150/EA	#10 BAR-GRIP COUPLERS	\$9.20	\$19,780.00
	PHASE IV		
	(a) VAULT 104 WALLS		
1,563/EA	#11 BAR-GRIP COUPLERS	\$10.70	\$16,718.75
2,150/EA	#10 BAR-GRIP COUPLERS	\$9.20	\$19,780.00
	(b) VAULT 103 WALLS		
1,563/EA	#11 BAR-GRIP COUPLERS	\$10.70	\$16,718.75
2,150/EA	#10 BAR-GRIP COUPLERS	\$9.20	\$19,780.00

REF C-4.1

ADDITIONAL TERMS & CONDITIONS

1. IN ADDITION TO THE ITEMS LISTED ABOVE, VENDOR AGREES TO FURNISH A MINIMUM OF 2 MODEL BG 750M BAR-GRIP PRESSES WITH ASSOCIATED PUMPS, HOSES & ACCESSORIES FOR INSTALLING THE ABOVE MENTIONED COUPLERS AT THE RATE OF \$5,850.00 PER CALENDAR YEAR. Note 8
2. ABOVE PRICES INCLUDE SERVICES OF FACTORY TECHNICIAN FOR INITIAL STARTUP & TRAINING FOR COUPLER PLACING PERSONNEL. Note 9
3. ABOVE PRICES EXCLUDE WASHINGTON STATE SALES TAXES.
4. BAR-GRIP PRESSES ARE TO BE SHIPPED TO THE ABOVE MENTIONED JOBSITE LOCATION. BAR-GRIP COUPLERS ARE TO BE SHIPPED TO FARWEST STEEL CORPORATION, 4421 ENTERPRISE, BOISE, IDAHO 83715. ALL FREIGHT COSTS TO THE JOBSITE OR BOISE TO BE PAID FOR BY DAVID A. MOWAT COMPANY.
5. SUPPLIER MAY BE REQUIRED TO FURNISH SAMPLE SPLICES FOR TESTING TO GAIN APPROVAL FROM THE OWNER. THESE SAMPLES ARE TO BE FURNISHED AT NO COST TO DAVID A. MOWAT COMPANY.
6. SUPPLIER WILL BE REQUIRED TO SUBMIT MANUFACTURER'S CERTIFIED TEST REPORTS SHOWING CHEMICAL ANALYSIS AND PHYSICAL TESTS MADE ON PARTICULAR HEAT OR HEATS OF STEEL FROM WHICH REINFORCING STEEL MECHANICAL COUPLERS WERE MANUFACTURED. SUBMIT SEPARATE CERTIFICATES FOR EACH GROUP OF LIKE ITEMS FURNISHED BY EACH SUPPLIER WITH EACH SHIPMENT.

REF C-4.1

DAVID A. MOWAT
 BELLEVUE WA

 file:
 DAM0043

PROJECT: HANFORD VAULTS

CHANGE ORDER 18A - COST PROPOSAL

ITEM C-5.1

HOT WEATHER CONCRETE - ORIGINAL PLAN Vs ACCELERATED PLAN

VAULT NUMBER	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
V102			220	750	220		1322	418	685	267				200				
V103				220	750	220		1322	418	685	267				200			
V104					220	750	220		1322		786	317	267				200	
V105						220	750	220		1322		786	317	267				200

	0	0	220	970	1190	1190	2292	1960	2425	2274	1053	1103	584	467	200	0	200	200
									2425	4699	5752	6855						16328

VAULT NUMBER	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
V102								370	820	1322	786	584			200			
V103								220	750	220	1740	685	267		200		200	
V104								220	150	820	1322		418	685	267			
V105									220	750	220	1322	418	368	584			200

	0	0	0	0	0	0	0	810	1940	3112	4068	2591	1103	1053	1251	0	200	200
									1940	5052	9120	11711						16328

HOT WEATHER CONCRETE ANALYSIS

ORIGINAL CONCRETE PLACEMENT FOR JUN-JUL-AUG-SEP 6855 (1.04 WASTE FACTOR)= 7129

ACCELERATED CONCRETE PLACEMENT FOR JUN-JUL-AUG-SEP 11711 (1.04 WASTE FACTOR)=12179

=====

DIFFERENCE-----> 5050

PURCHASE ORDER

"This order is priority ordered DD-E-1 certified under PS REG/DMS-1"

DAVID A. MOWAT COMPANY
P.O. Box 1201
Bellevue, WA 99352

TO: ACME CONCRETE COMPANY
P.O. BOX 56
RICHLAND, WA 99352

SHIP TO: Grouted Waste Disposal Area
200 Area
Hanford, WA

Phone: 509/946-4131

Job Phone No.

Contact: Brent Chigbrow

DATE	DELVY DATE	SHIP VIA	FOB	TERMS	I.P.O. NUMBER
10/18/89	As Required	Trucks	Jobsite	12% 10th Net 30 d	1250- 3

Furnish the following materials and/or services in strict accordance with the Contract Plans and Specifications, including Addenda Nos. 1,2,3,4, and 5 for the construction of the Grout Waste Facility, Contract No. KEH-5162(B-714). Specific reference is made to the following Contract Drawings and Specification Sections, however, vendor is responsible for determining all applicable sections for this order:

	Spec Sections	Contract Drawings
7	GENERAL CONDITIONS	Does not apply.
	01010-01720	
3	03300	
5	03301	

VENDOR will be required to comply with the Project Quality Assurance Program (Q.A.P.) as provided in the contract Specifications Section 01400 and the attached DAMCO's Q.A.P. dated (Oct 2, 1989) is incorporated into this Purchase Order. Material Safety Data sheets (MSDS) are required 5 days before delivery to the job site.

LINE NO	APPROX QTY.	DESCRIPTION	PRICE	AMOUNT
1	260 CY	3,000 PSI CONCRETE	43.00	\$11,180.00
2	17,750 CY	4,000 PSI CONCRETE	46.00	\$816,500.00
3	100 CY	SUPERPLASTICIZER - AS REQUIRED	3.96	\$396.00
4	100 CY	HOT WATER - AS REQUIRED	.50	\$50.00
5	100 CY	CHILLING - AS REQUIRED	4.10	\$410.00
6	2,100 TN	DRAIN GRAVEL	6.80	\$14,280.00
8		TOTAL -->		\$842,816.00

ADDITIONAL TERMS AND CONDITIONS:

PRICE INCLUDES:

Delivery slips with identification as to point of delivery in accordance with contract requirements.

REF C-5.2

J & S Construction, Inc.

(509) 862-2593 JS-CO-N--1050B
 1476 Sleepy Hollow Rd. Wenatchee, WA 98801

5-7-90

David A. Mowat Co.
 P.O. Box 1201
 Bellevue, WA 98009

Attn Jim Keller

Re: KEH-5162 (B-714)
 Vault Concrete Basin 200 East Area

Gentlemen;

Here you will find our cost proposal for proposed exceleration as requested.

1. Project superintendent	16,800.00
2. Lost productivity	156,243.60
3. added office for 5 months	3,840.00
4. extra welder	2,000.00
5. Mark up 20%	53,171.88
6. Extra financing cost 12% - 2 months	5,317.18
7. Proposed cost for unforeseeable problems	20,672.00
8. Total	324,348.46

The extra cost is based on 5 months- June through Oct, two shifts working four days ten hrs per day ten men per shift as stated in section // 7 in the Site Compliance Agreement.

Also we will need a two week turn around on progress payments. If you have any questions please feel free to call.

Sincerely

Shirley A. Peart
 Shirley A. Peart, President
 J & S Construction Inc.

TERAL, INC.
P.O. BOX 238
CHESHIRE, OR. 97419

FAX: 503-998-8504

MAY 7, 1990

DAVID A. MOWAT CO.
P.O. BOX 1201
BELLEVUE, WA. 98009

ATTN: PAUL HEATHER

RE: VAULT CONCRETE BASIN
HANFORD SITE, RICHLAND, WA.
COST TO EXCELLARATE

DESCRIPTION:
HDPE LINER (BASIN)

	<u>AMOUNT:</u>	<u>TOTAL:</u>
LABOR: 40 MAN HOURS	\$ 34.00 PH	\$1,360.00
LABOR: FORMAN 20 HOURS	36.00 PH	720.00
Q.A. INSPECTION & REPORTS 16 HOURS	36.00 PH	576.00
STAND BY GENERATOR 2 DAYS	55.00 PD	110.00
SUBTOTAL:		\$2,766.00

DESCRIPTION:
HDPE VAULT SIDES

LABOR: 56 MAN HOURS	\$ 34.00 PH	\$1,904.00
LABOR: FORMAN 24 HOURS	36.00 PH	864.00
Q.A. INSPECTION & REPORTS 16 HOURS	36.00 PH	564.00
2nd SISSOR TRUCK 3 DAYS	118.00 PD	354.00
MOVE IN/OUT COSTS @ \$100.00		100.00
COMPANY TRUCK 2 DAYS	48.00 PD	96.00
SUBTOTAL:		3,882.00

SMALL HAND TOOLS 5%		332.40
WASHINGTON SALES TAX 7.8%		544.47
OVERHEAD & PROFIT 26.5%		1,994.09
TOTAL:		\$9,518.96

9112751738



Insurance Brokers/Surety Bonds
 1700 First Interstate Center/999 3rd Avenue
 Seattle, Washington 98104 (206) 382-7900
 Telex (71) 296332 PSFS UR

FILE NO.

VERBAL SUBCONTRACT BID

Marker, Smith & Feek, Inc.

Job HANFORD VAULTS

Date 3/11/90

Subcontractor CONTRACTORS EQUIP

By: DENNIS WOOD

Address _____

Phone 582-3407

DAVE KENT

DESCRIPTION ITEM BACKFILL VAULTS

Comply with Plans and Specs Yes No Addenda Acknowledged _____

Spec. Sect. _____

Bulletin No. _____

QUOTATION

Delivery Data:

Erected or installed Yes No

F. O. B. WHERE? _____

Sales Tax Included Yes No

Subcontract Bond Included Yes No

Discount _____

Can meet time schedule _____

BASE BID

\$10,543⁴⁰ / WEEK

ALTERNATES:

7 DAY / WEEK

10 HRS / DAY

Remarks and Items Included:

ADD MECHANIC
LOSS OF PRODUCTION 21%
NO PARTS ON WEEKEND
STAND BY MACHINE

≈ 4-5 MEN

SAY 4 WKS =

\$42,176⁰⁰

Conditions: _____

By _____



COMMERCIAL
AND
INDUSTRIAL

10000 11111111111111111111
KENNEWICK, WASHINGTON
99337

May 7, 1990

HBPAA**379N9

DAMCO
P. O. Box 1369
Richland, WA 99352

Attn: Jim Keller

Re: KEH-5162, Grouted Waste Facilities, Accelerated Schedule,
Vault 102

This letter is in response to your request May 2, 1990 to accelerate the schedule for the interior coating of vault 102. The original intent was to work 3 guys, 8 hrs/day for 16 days. The overall completion for the interior coating of Vault 102 is based on 4 men, 12 hrs/day for 7 days. Additional cost incurred for accelerated schedule is listed below.

Labor

4 men, 168 overtime hours \$2,941.68. Work done on holiday would be at double time rather than time and a half. Figure quoted above is for half-time rate only.

Equipment

Additional equipment needed to accelerate schedule, \$1725.00.

- 1 gun \$375.00
- 150 ft. spray line \$250.00
- 1 hood \$560.00
- 1 free air pump \$500.00

Total cost of accelerated schedule, \$4,666.68

This whole schedule is dependant upon DAMCO being able to maintain proper heating and lighting during application of coating. Due to the time of year I do not feel a second 12 hour shift wise due to the extreme temperature drop at night.

If you have any other questions please call me.

Sincerely,
H. B. Painters, Inc.

Gerry Brinkley
Gub.
Jerry Brinkley, President

0
1
2
3
5
7
1
1
6

GD	HSW	OBH	JHK
			0
			✓
FILE: H/B → DAMCO	012-1121		
Address ✓			



Insurance Brokers/Surety Bonus
 1700 First Interstate Center/999 3rd Avenue
 Seattle, Washington 98104 (206) 382-7900
 Telex (71) 296332 PSFS UR

FILE NO.

VERBAL SUBCONTRACT BID

Parker, Smith & Feek, Inc.

Job HANFORD VAULTS

Date 5/16/90

Subcontractor POWER CITY

By: DON ANDRES

Address _____

Phone 509 547-9525

ID ITEM ELECTRICAL

As per Plans and Specs Yes No Addenda Acknowledged _____

Sec. Sect. _____

Bulletin No. _____

QUOTATION

Delivery Data:

Erected or installed Yes No

F. O. B. WHERE? _____

7

Sales Tax Included Yes No

Subcontract Bond Included Yes No

Discount _____

Can meet time schedule _____

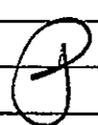
BASE BID

ALTERNATES: _____

\$ 50,000^{us} ALLOWANCE VERIFY?

Remarks and Items Included: _____

Exclusions: _____

By 

PS&F

1700 First Interstate Center/999 3rd Avenue
Seattle, Washington 98104 (206) 382-7900
Telex (71) 296332 PSFS UR

Parker, Smith & Feek, Inc.

FILE NO.

VERBAL SUBCONTRACT BID

Job HANFORD VAULTS

Date 5/16/90

Subcontractor ZYPHER MECHANICAL

By: 509/586-8583
Phone

Address _____

ID ITEM MECHANICAL

Comply with Plans and Specs Yes No Addenda Acknowledged _____

Spec. Sect. _____

Bulletin No. _____

QUOTATION

Delivery Data:

Erected or installed Yes No

F.O.B. WHERE? _____

7

Sales Tax Included Yes No

Subcontract Bond Included Yes No

Discount _____

Can meet time schedule _____

2

BASE BID

ALTERNATES: _____

Remarks and Items Included: _____

INCREASED COST DUE TO ACCEL.

VERIFY ALLOWANCE \$50000

Exclusions: _____

(Signature)

By

PS&F

Insurance Brokers/Surety Bonds
1700 First Interstate Center/999 3rd Avenue
Seattle, Washington 98104 (206) 382-7900
Telex (71) 296332 PSFS UR

FILE NO.

VERBAL SUBCONTRACT BID

Parker, Smith & Feek, Inc.

JOB HANFORD VAULTS Date 5/16/90
Subcontractor ACME CONCRETE By: BRENT
Address _____ Phone 946-4131

BID ITEM CONCRETE PREMIUM

As per Plans and Specs Yes No Addenda Acknowledged _____

Spec. Sect. _____ Bulletin No. _____

Delivery Data:
Erected or installed Yes No
F.O.B. WHERE? _____
Sales Tax Included Yes No
Subcontract Bond Included Yes No
Discount _____
Can meet time schedule _____

QUOTATION

BASE BID

ALTERNATES: _____

Remarks and Items Included:
PREMIUM @ ACCELERATION
SEE ATTACHED

ALLOW 10,000 cy @ 10⁰⁰/cy = \$1,000,000

Exclusions: _____

By P

WEEKLY EXTRA HANFORD PROJECT
 ACCELERATED SCHEDULE - APPROX. DOLLAR AMOUNTS

2nd Production shift M-F	\$3,200.00
Saturday - Production shift #1	960.00
Production shift #2	960.00
Maint. shift	720.00
Sunday - Production shift #1	1,237.44
Production shift #2	1,237.44
Maint. shift #3	928.08
Additional Electric weekly	1,000.00
QC Weekly	625.00
Serviceman - Saturday	118.56
Sunday	158.08

These following items won't apply when plant is running at Hanford:

Richland Batch Plant - Overlap shift	1,750.80
Maint. shift - 1 man extra	800.00
Saturday extra - Batch plant (Richland)	700.00
Sunday Extra - Batch plant (Richland)	928.00
Hanford Batch Plant - (1½ times) - Saturday	882.70
(2 times) - Sunday	1,138.59
QC (Hanford) (1½ times) - Saturday	235.28
(2 times) - Sunday	297.84

Hanford Batch Plant Teamsters

All overtime on Saturday 1½ Times @ 33.02 P/Hr.
 All overtime on Sunday 2 Times @ 41.26 P/Hr.

Overtime for Teamsters on Saturday and Sunday is unknown. It can only be calculated when exact hours of work are known.

The preceding numbers are figured on a per week basis only.

Brent Chigbrow



91120551714

ACTIVE CONCRETE

FIGURE SUNDAY WORST CASE

OPERATOR 10 HRS
MECHANIC 10 HRS

20 HRS

DBL-TIME RATE @ 44^w
S/T @ $\left\langle \frac{29^w}{15^w} \right\rangle$ \$ 300^w
PREMIUM

MAINT SHIFT 10 HRS @ 44^w \$ 440^o
QC PREMIUM 10 HRS @ 15^w \$ 150^o

TEAMSTER:

5 MEN @ 15^w/HR x 10 HR \$ 750^w

\$ 1640^w/DAY

200 cy = \$ 8²⁰/cy

300 cy = \$ 5⁴⁷/cy

400 cy = \$ 4¹⁰/cy

ADD FOR BATCH PLANT ??

91129551715



INSURANCE BROKERS/SALES/DONORS
 1700 First Interstate Center/999 3rd Avenue
 Seattle, Washington 98104 (206) 382-7900
 Telex (71) 296332 PSFS UR

FILE NO.

Parker, Smith & Feek, Inc.

VERBAL SUBCONTRACT BID

JOB HANFORD VAULTS Date 5/13/90
 Subcontractor ACME ASPHALT By: Don
 Address _____ Phone 946-4131

BID ITEM ASPHALT BACKFILL

As per Plans and Specs Yes No Addenda Acknowledged _____

Spec. Sect. _____ Bulletin No. _____

Delivery Data:
 Erected or installed Yes No
 F. O. B. WHERE? _____

 Sales Tax Included Yes No
 Subcontract Bond Included Yes No
 Discount _____
 Can meet time schedule _____

QUOTATION

BASE BID

ALTERNATES: USE \$100,000

Remarks and Items Included:

SEE ATTACHED BREAKDOWN

Exclusions: _____

By

Additional charges for accelerated schedule
 all the prices listed below are in addition
 to charge order # 11.

Sundays

Varies	Teamsters -	21.50 per hour per teamster	depends on DAMECO delivery
2	Plant operator	21.50 per hour per operator	
1	Mechanic	45.05 per hour per mechanic	
1	Foreman	22.25 per hour	
1	Superintendent	22.25 per hour	plant op
Varies	operators & labor	21.50 per hour	Loader op Laborer on Feeder

Saturday & OT weekdays

	Teamsters -	10 ⁰⁵
	operators	10 ⁰⁵
	Laborer	10 ⁰⁵
	Mechanic	40 ⁰⁵
	foreman	10 ⁸⁰
	Supt	10 ⁸⁰

Additional plant Expense

Operation for accelerated schedule will require
 moving a portable plant to Richmond to take
 care of our commercial operation

Mobilization in and out	30,000
20 %	6,000
Hourly plant rent (includes operators and equipment) 750 ⁰⁰ per hour x 8 Hrs = 6,000	36,000
20 % 1,200	(7,200)

Conditions

- (A) Agreement for change order 7 & 11 are completed and paid for
- (B) Accelerated schedule must be negotiated prior to beginning of paving
- (C) Mobilization for portable will be paid in full when plant is set in Richland
- D. Payment for portable plant will be for not less than 30 days and not more than 60 days. After sixty days agreement will be required or paid in full. Payment for portable will begin no later than 72 hours after plant is set and operable!

9 1 1 2 5 5 1 7 1 8

Needs case letter
Ew metal plant
Sale Block
Hanford Ewmin Plant
805 Cathals
Richland 99352
UMC-250
AR-9000

DAVID A. MONAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

ITEM E. WINTER PROTECTION

		RATE	DAYS	HRS/DAY	AMOUNT
		-----	-----	-----	-----
E-1	GROUND THAWING				
	2 LABORERS (HRS)	\$27.03	25	8	10,812
	2 WEED BURNERS (HRS)	\$5.00	25	8	\$2,000
E-2	ERECT & DISMANTLE COVERS				
	3 CARPENTERS	\$27.73	25	8	\$16,638
	2 LABORERS	\$23.79	25	8	\$9,516
	1 OPERATORS	\$27.61	25	8	\$5,522
	1 FOREMAN	\$28.95	25	8	\$5,790
E-3	EQUIPMENT				
	1 CRANE- 20 TON	\$24.23	25	8	\$4,846
	10 HEATERS (UNITS)	\$1.00	25	24	\$6,000
	10 FANS (UNITS)	\$1.00	25	24	\$6,000
	1 FUEL (LS)	\$24.00	25	24	\$14,400
E-4	MATERIALS				
	TARPS (SF)	25,000 SQ FT X	\$2.00 /SF =		\$50,000
	FRAME (SF)	25,000 SQ FT X	\$2.00 /SF =		\$50,000
E-5	INTERIOR COATING				
	ALLOWANCE	2 VAULTS @ \$35,000 /VAULT			\$70,000
E-6	TOTAL WINTER PROTECTION EXPENSE				\$251,524

91127551719

911205517:0

LIFTING ROUGH TERRAIN HYDRAULIC CRANES

Model (Yr. Disc.)	Axle Config.	Max. Bm. Lngth.	Lift Capy.	HP	Monthly	Weekly	Daily	Hourly	Estimated Operating Cost/Hr.
Diesel Powered (Cont.)									
GROVE (Cont.)									
RT420	4 X 4	70.0 ft	20.0 T	105.0	\$5,180.00	\$1,450.00	\$365.00	\$55.00	\$15.40
RT422	4 X 4	70.0 ft	22.0 T	105.0	5,180.00	1,450.00	365.00	55.00	15.40
RT515 (1987)	4 X 2	42.0 ft	15.0 T	125.0	4,745.00	1,330.00	335.00	50.00	15.80
RT515 (1987)	4 X 2	70.0 ft	15.0 T	125.0	5,000.00	1,400.00	350.00	53.00	16.10
RT518 (1987)	4 X 4	60.0 ft	18.0 T	125.0	5,085.00	1,420.00	355.00	53.00	15.85
RT518 (1987)	4 X 4	70.0 ft	18.0 T	125.0	5,315.00	1,490.00	375.00	56.00	16.15
RT520 (1987)	4 X 4	60.0 ft	20.0 T	125.0	5,145.00	1,440.00	360.00	54.00	16.10
RT520 (1987)	4 X 4	70.0 ft	20.0 T	125.0	5,300.00	1,505.00	375.00	56.00	16.00
RT522 (1987)	4 X 4	70.0 ft	22.0 T	125.0	5,260.00	1,475.00	370.00	56.00	16.35
RT522C	4 X 4	70.0 ft	22.0 T	114.0	6,200.00	1,735.00	435.00	65.00	17.45
RT522C	4 X 4	70.0 ft	22.0 T	125.0	6,150.00	1,720.00	430.00	65.00	17.70
RT522C	4 X 4	70.0 ft	22.0 T	130.0	6,165.00	1,725.00	430.00	65.00	17.85
RT525 (1987)	4 X 4	60.0 ft	25.0 T	121.0	5,245.00	1,470.00	370.00	56.00	16.10
RT525 (1987)	4 X 4	60.0 ft	25.0 T	125.0	5,245.00	1,470.00	370.00	56.00	16.25
RT525 (1987)	4 X 4	70.0 ft	25.0 T	121.0	5,305.00	1,485.00	370.00	56.00	16.25
RT525 (1987)	4 X 4	70.0 ft	25.0 T	125.0	5,305.00	1,485.00	370.00	56.00	16.35
RT525B (1987)	4 X 4	80.0 ft	25.0 T	121.0	5,915.00	1,655.00	415.00	62.00	17.40
RT525B (1987)	4 X 4	80.0 ft	25.0 T	125.0	5,810.00	1,625.00	405.00	61.00	17.30
RT525C	4 X 4	70.0 ft	25.0 T	121.0	6,200.00	1,735.00	435.00	65.00	17.85

© 1989 Dataquest Incorporated
(May not be reprinted or copied in whole or part, in paper, electronic or any other form without written permission from Dataquest.)
Rental Rate Blue Book, Vol. 1

10/89

#13-13

176 hrs @ 29²³ = \$ 5145 /mo

REF E-3.1

PS&F

1700 First Interstate Center/999 3rd Avenue
Seattle, Washington 98104 (206) 382-7900
Telex (71) 296332 PSFS UR

FILE NO.

Parker, Smith & Feek, Inc.

VERBAL SUBCONTRACT BID

Date _____

Subcontractor _____ By: _____

Address _____ Phone _____

BID ITEM PROPANE HEATERS

As per Plans and Specs Yes No Addenda Acknowledged _____

Spec. Sect. _____ Bulletin No. _____

Delivery Data:

Erected or installed Yes No

F. O. B. WHERE? _____

Sales Tax Included Yes No

Subcontract Bond Included Yes No

Discount _____

Can meet time schedule _____

QUOTATION

BASE BID

ALTERNATES:

Remarks and Items Included:

PROPANE HEATERS

≈ 1^w / gal

250,000 BTU @ 2½ gal/hr.

Exclusions:

REF E-3.2

By _____



THORESON & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS
110 WEST DAYTON, SUITE 201
EDMONDS, WASHINGTON 98020

(206) 268-3088
FAX (206) 624-1984

April 23, 1990

Mr. Tom Gaetz
David A. Mowat Company
P. O. Box 1201
Bellevue, WA 98009

Dear Tom:

This report is intended to summarize for you our interpretations and application of the Federal Acquisition Regulations (FARS) as they pertain to the David A. Mowat Company's contractual obligation to the Department of Energy at its Hanford Nuclear Waste Site.

The FARS, as published by the federal government are the authoritative pronouncements that govern what types of costs are allowable and therefore reimbursable under a contract awarded by the federal government.

Specifically, you have asked us to look at two types of costs that will be incurred in order to accomplish the work called for under the various change orders. We therefore will address home office general and administrative costs, and job site support costs.

Part 31 of FARS Title 48, Chapter 1 addresses the various types of costs and how to allocate each to a contract. In reviewing the FARS that are applicable to your company and the general and administrative costs that are reflected on your January 31, 1989 and 1988 audited financial statements, it appears to us that we must go through a purification process. FARS requires certain costs that would otherwise be categorized as general and administrative under generally accepted accounting principles to be excluded from those that are allowable under the federal government contract. Quantified for you on Schedules 1 and 2 are the adjustments that we feel are necessary to bring your general and administrative costs into compliance with the FARS.

As you will note from the schedules, the company's general and administrative costs range from 8.92% to 9.88% of revenue when adjusted for compliance with FARS.

Schedule 5 details the job site general and administrative expenses that were projected in the original bid. We have adjusted the original for specific cost items that will be dealt with separately. Please note that job site general & administrative expenses currently equate to 6.75% of the original bid price.

9112055172

Mr. Tom Gaetz
April 23, 1990
Page two

In order to compare the results for reasonableness we have chosen two other projects, Umatilla Bridge, and Wells Avenue Bridge.

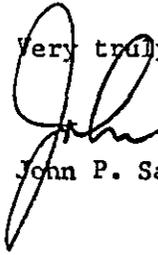
	<u>Umatilla Bridge</u>	<u>Wells Ave. Bridge</u>
Cost of General Conditions:		
To-Date November 30, 1989	\$333,224	\$661,551
Billings to-date November 30, 1989	\$4,177,786	\$6,061,341
% of costs to billings	<u>7.97%</u>	<u>10.91%</u>

Based on the above analysis, and taking into consideration the strict quality control standards required by the Department of Energy, it would appear that the job site general and administrative expenses could very likely exceed the amount bid.

We suggest that this cost category be closely monitored for any variances.

If we can be of further assistance, please let us know.

Very truly yours,


John P. Sandstrom

cra
enc.

911215517-3

9 1 1 2 3 5 5 1 7 4

DAVID A. MOWAT COMPANY

SCHEDULE 1
GENERAL AND ADMINISTRATIVE EXPENSES
ADJUSTED TO COMPLY WITH FARS
JANUARY 31, 1989

	1/31/89	Adjustments	Ref. #	As Adjusted	FARS Site
Administrative salaries....	\$2,499,884			\$2,499,884	31.205-6
Payroll taxes.....	47,056			47,056	31.205-41
Employee benefits.....	84,357	\$ (3,718)	1	80,639	31.205-6(b), 31.205-13, 31.205-14
Warehouse and yard.....	306,916			306,916	31.205-6, 31.205-36, 31.205-91
Small tools and supplies...	48,665	(48,665)	2	0	
Business taxes and licenses	6,162			6,162	31.205-91
Depreciation.....	28,799			28,799	31.205-11
Auto and truck expense....	9,923	(3,900)	3	6,023	31.205-6(m)
Insurance.....	31,254	(1,585)	4		31.205-19
		(21,500)	5	8,169	
Rent.....	49,403			49,403	31.205-36
Office expense.....	60,394			60,394	
Telephone.....	23,584			23,584	
Travel and promotion.....	15,249	(7,259)	6	7,990	31.205-14, 31.205-46, 31.205-46
Professional services.....	47,656	(30,000)	7	17,656	31.205-33
Charitable contributions...	2,750	(2,750)	8	0	31.205-8
Miscellaneous.....	22,625			22,625	31.205-43
Profit-sharing plan.....	142,667	(13,275)	9	129,392	31.205-6
 Total	 <u>\$3,427,344</u>	 <u>(132,652)</u>		 <u>\$3,294,692</u>	
 Percent of revenue	 <u>10.28%</u>			 <u>9.88%</u>	
 General and administrative expense per day				 <u>\$9,027</u>	

9 1 1 2 7 5 5 1 7 7 5

DAVID A. MOWAT COMPANY

SCHEDULE 2
 GENERAL AND ADMINISTRATIVE EXPENSES
 ADJUSTED TO COMPLY WITH FARS
 JANUARY 31, 1988

	1/31/88	Adjustments	Ref. #	As Adjusted	FARS Site
Administrative salaries....	\$1,470,049			\$1,470,049	31.205-6
Payroll taxes.....	40,410			40,410	31.205-41
Employee benefits.....	68,519	\$ (4,503)	1	64,016	31.205-6(b), 31.205-13, 31.205-14
Warehouse and yard.....	238,902			238,902	31.205-6, 31.205-36, 31.205-91
Small tools and supplies...	26,936	(26,936)	2	0	
Business taxes and licenses	5,919			5,919	31.205-91
Depreciation.....	21,771			21,771	31.205-11
Auto and truck expense....	12,906	(3,900)	3	9,006	31.205-6(b)
Insurance.....	14,501	(1,585)	4	12,916	31.205-19
Rent.....	48,000			48,000	31.205-36
Office expense.....	52,484			52,484	
Telephone.....	22,786			22,786	
Travel and promotion.....	7,671	(4,340)	6	3,331	31.205-14, 31.205-46, 31.205-93
Professional services.....	12,477			12,477	31.205-33
Charitable contributions...	1,100	(1,100)	8	0	31.205-8
Miscellaneous.....	22,218			22,218	31.205-43
Profit-sharing plan.....	120,000	(13,275)	9	106,725	31.205-6
Total	\$2,186,649	\$(55,639)		\$2,131,010	
 Percent of revenue	 <u>9.61%</u>			 <u>8.92%</u>	
 General and administrative expense per day				 <u>\$5,838</u>	

DAVID A. MOWAT COMPANY

SCHEDULE 3
ADJUSTMENTS NECESSARY TO BRING
GENERAL AND ADMINISTRATIVE EXPENSES
IN COMPLIANCE WITH FARS

Ref.
#

- 1 To remove sporting event tickets and other meals and entertainment.
- 2 To remove 100% of small tool purchases not allocated to a specific job.
- 3 To remove an allowance for personal usage of administrative vehicles.
- 4 To remove life insurance premium on Mr. Mowat, the company is the beneficiary.
- 5 To remove an audit adjustment related to specific jobs closed in a prior period.
- 6 To remove job related travel and entertainment.
- 7 To remove an estimated amount paid to attorneys for services rendered on specific contracts. The government auditor has invoices in his possession at this time.
- 8 To remove 100% of charitable contributions.
- 9 To remove that portion of the profit share plan contribution related to those non-union employees that will be specifically charged to the Hanford job. The burden for this item is accounted for elsewhere.

91127551736

DAVID A. MOWAT COMPANY

SCHEDULE 4
GENERAL AND ADMINISTRATIVE EXPENSES
EXPLANATION OF ACCOUNT CONTENT

Administrative salaries	Gross wages of president, vice president, estimator and all home office support staff.
Payroll taxes	Payroll taxes related to above payroll only.
Employee benefits	Labor & Industry Medical Coverage, Group Medical for above employees, also includes cost of Christmas party and company picnic.
Warehouse and yard	Labor cost of maintaining yard, retail cost of yard, real estate taxes related to yard, and repair and maintenance of warehouse.
Small tools and supplies	Cost of small tools and supplies not specifically charged to a job.
Business taxes and licenses	Property taxes, misc. sales tax.
Depreciation	Depreciation of administrative vehicles (5 cars) and office furniture.
Auto and truck expense	Repairs, maintenance and other costs of above administrative vehicles.
Insurance	Administrative vehicles, office building, life insurance on president.
Rent	Office building
Office expense	Janitorial, landscaping, office supplies, postage, utilities.
Telephone	Home office telephone.
Travel and promotion	Conventions, meetings, administrative travel.
Professional services	Accountants, lawyers.
Charitable contributions	Charitable contributions.
Miscellaneous	AGC subscriptions.
Profit-sharing plan	15% contribution for employees not subject to collective bargaining.

91120551707

DAVID A. MOWAT COMPANY

SCHEDULE 5
JOB SITE GENERAL & ADMINISTRATIVE EXPENSE
AS PROVIDED FOR IN ORIGINAL CONTRACT PRICE
HANFORD JOB #250

Total cost of general
conditions as bid..... \$1,091,436

Adjustments for costs to
be calculated separately:

Construction Equipment:

Crane.....	\$90,000	
Compactor.....	30,000	
Backhoe.....	20,000	
Mobilization.....	<u>16,667</u>	(156,667)

Fuel and Lube..... (8,000)

Subsistence..... (20,000)

Other Adjustments:

Supervision Bonus and Profit Share Contribution
(estimated) based on 666 days..... 33,350

Total anticipated on original contract..... \$ 940,119

% of bid price \$940,119 - \$13,917,000 = 6.75%

9 1 1 2 0 5 5 1 7 7 0

DAVID A. MOWAT COMPANY

SCHEDULE 6

APPLICATION OF EICHLEAY FORMULA

EICHLEAY FORMULA

Contract Billings X Total Overhead For = Overhead Allocable
Total Billings For Contract Period Contract Period To The Contract

911205517:9

Application Of Formula

\$33,309,000 X 616 days in Contract = \$56,214,641
[FYE 1-31-89 365 days in year [Total Billings For
Job Revenue] Contract Period]

\$13,900,000 [Contract Amount] X [\$9026¹ X 616] = \$1,378,883
\$56,214,641 [From Above]

\$1,378,883 ÷ 616 = \$2238

Overhead allocable to contract per day = \$2238.

¹ From Page # 2

DAVID A. MOHAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS
EXTENDED PERFORMANCE
SUMMARY OF PROPOSAL ELEMENTS

ITEM M. INCREASED LABOR		\$10,000
M-1 OVERTIME PREMIUM	0	
M-2 SHIFT OVERLAP EFFECT	0	
M-3 ORIENTATION EFFECT	0	
M-4 TEMPERATURE EFFECT	10,000	
M-5 SUPERVISION PREMIUM	0	
ITEM N. OVERHEAD STAFF		\$228,483
ITEM O. EQUIPMENT		\$180,612
ITEM P. SUBCONTRACTORS		\$0
MECHANICAL	0	
ELECTRICAL	0	
CONCRETE	0	
REINFORCING	0	
ASPHALT	0	
LINER	0	
ASPHALT COATING	0	
ITEM Q. WINTER PROTECTION		?????????
ITEM R. CONTINGENCY		\$0
		=====
		\$419,095
ITEM S. GENERAL & ADMINISTRATIVE		
FIELD OFFICE	0.00%	\$0
HOME OFFICE	0.00%	\$0
		=====
		\$419,095
ITEM T. PROFIT @ 10.00%		\$41,910
		=====
		\$461,005
ITEM U. BOND & INSURANCE @ 1.30%		\$5,993
		=====
		\$466,998
ITEM V. NON-ABSORBED HOME OFFICE EXPENSE		
126 DAYS @ \$2,238 /DAY		\$281,988
		=====
		\$748,986
	TOTAL AMOUNT	\$748,986

9112055170

DAVID A. MOWAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

ITEM N. OVERHEAD EXPENSE

N-1 OVERHEAD STAFF

1 PROJECT MANAGER	\$1,631 /WEEK =	\$1,631
1 FIELD ENGR	\$1,416 /WEEK =	\$1,416
1 CONTRACT ADMIN	\$1,138 /WEEK =	\$1,138
1 CLERK	\$522 /WEEK =	\$522
1 COST ENGR	\$1,138 /WEEK =	\$1,138
1 SUPERINTENDENT	\$1,577 /WEEK =	\$1,577
1 QC MANAGER	\$1,199 /WEEK =	\$1,199
3 QC INSP	\$944 /WEEK =	\$2,832
1 QC CLERK	\$522 /WEEK =	\$522
	=====	=====
	\$10,087	\$11,975

N-2 OVERHEAD EXPENSE

COST/WEEK		\$11,975
TIME FRAME:		126 DAYS
WEEKS		18 WEEKS
		\$215,550
WAGE INCREASE @	6.00%	\$12,933
		=====
TOTAL EXPENSE		\$228,483

9112755171

DAVID A. NOWAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

ITEM D. EQUIPMENT

	RATE	HOURS	AMOUNT
0-1 EQUIPMENT			
2 PROJECT OFFICE	\$1.80	40	144
5 TOILET FACILITIES	\$0.50	40	100
5 TEMP POWER	\$1.00	40	200
1 PHONE	\$45.00	40	1,800
1 OFFICE & COPY SUPPLIES	\$35.00	40	1,400
1 STORAGE VAN	\$0.90	40	36
1 BACKHOE/LOADER	\$9.90	40	396
1 CRANE 70 TON	\$61.10	40	2,444
1 CRANE 40 TON RT	\$50.30	40	2,012
5 PICKUP	\$2.60	40	520
1 BOOMTRUCK 22 TON	\$21.45	40	858
1 WATERTRUCK	\$3.10	40	124

WEEKLY EXPENSE 10,034

0-3 EQUIPMENT EXPENSE

COST/WEEK	\$10,034
TIME FRAME	126 DAYS
WEEKS	18 WEEKS
TOTAL EXPENSE	\$180,612

91129351712

DAVID A. MOWAT
BELLEVUE WA

05/14/90
file:
DAM00430

PROJECT: HANFORD VAULTS

SCHEDULE COMPARISON

NEW SCHEDULE	ORIGINAL	NEW
	-----	-----
DAYS AVAILABLE		
COMPLETE @ DAY	343	347
START @ DAY	40	131
	=====	=====
DAYS AVAILABLE	303	216
CALENDAR ADJUSTMEN	1	1
	=====	=====
	304	217
FIXED (CURE DAYS)	45	39
	=====	=====
	259	177
CB #1 NOT AVAILABL	40	40
	=====	=====
	219	137
CD CONTINGENCY	0	10
	=====	=====
	219	127
CD #2	0	8
	=====	=====
	219	119
SCHEDULE ADJUST	0	17
	=====	=====
DAYS REQUIRED	219	136
DIFFERENCE		83
DAYS AVAILABLE		198
SHORTFALL		41.92%

91120551754

REF-2.0

DAVID A. MOWAT
 BELLEVUE WA

05/13/90
 file:
 DAM00430

PROJECT: HANFORD VAULTS

GROUP	DESCRPTN	DURATION	SCHEDULED START		
			ORIGINAL	DELAY	ACCEL
1	CB SLAB	40	-----	-----	-----
2	CB LINER & BF	17	-----	-----	-----
3	VAULT SLAB	20	-----	-----	-----
4	VAULT WALL	58	-----	-----	-----
5	COAT/HYRO TEST	33	-----	-----	-----
6	ROOF DECK	32	-----	-----	-----
7	M&E/BKFL	49	-----	-----	-----
8	WEATHER	10	-----	-----	-----
9	CD CONTNGCY	0	-----	-----	-----

=====
 259

GROUP	DESCRPTN	DURATION	CD#2	CONTNGY	SCHED ADJUST	NEW DURTN	REVISE
1	CB SLAB	40	2			42	0 42.00
2	CB LINER & BF	17			6	11	5.00 6.00
3	VAULT SLAB	20				20	8.00 12.00
4	VAULT WALL	58	4			62	26.00 36.00
5	COAT/HYRO TEST	33	2		5	30	13.00 17.00
6	ROOF DECK	32				32	13.00 19.00
7	M&E/BKFL	49			6	43	18.00 25.00
8	WEATHER	10				10	0.00 10.00
9	CD CONTNGCY	0		10		10	0.00 10.00
							0.00
		===== 259	===== 8	===== 10	===== 17	===== 260	===== 83 177

	START	END	DAYS AVAIL	ADDL DAYS
5 DAY WEEK	131	347	217	
6 DAY WEEK	158	418	261	44
7 DAY WEEK	185	489	305	88

9112055175

REF - 3.0

DAVID A. MOWAT
BELLEVUE WA

05/16/90
file:
DAM00430

PROJECT: HANFORD VAULTS

SHIFT PRODUCTION COMPARISON

HOURS/WEEK	@ 7/10 70	DBL-SFT 80
EFFICIENCY LOSS		
SHIFT OVERLAP	5.71%	18.75%
ORIENTATION	1.28%	1.28%
TEMPERATURE	7.00%	7.00%
LEARNING CURVE	2.10%	2.10%
	-----	-----
TOTAL LOSS	16.09%	29.13%
HOURS LOST	11	23
	=====	=====
PRODUCTIVE HOURS	59	57
NORMAL HOURS	40	40
	=====	=====
HOURS GAINED	19	17

DIRECT PRODUCTION AFFECTED BY ACCELERATION

ESTIMATED LABOR		54000		54000
LOSS OF EFFICIENCY @	16.09%	8691	29.13%	15728
		=====		=====
TOTAL AFFECTED MHRS		62691		69728

9112055176

REF - 4.0

DRAFT

DAVID A. HOWAT
BELLEVUE WA

05/02/90
file:
DAN00430

HANFORD VAULTS
SCHEDULE ANALYSIS

GROUP	DESCRPTH	QUAN	DAYS @ SD/WK	HRS	WKS	DAYS @ 7D/WK
GRP 1	CB SLAB		42.00	336	8.4	50.8
	FORMS (SF)	3500				
	REBAR (TONS)	100				
	POUR & FINISH (CY)	1211				
	CURE					
GRP 2	CB LINER & BF		6.00	48	1.2	8.4
	HDPE LINER (SY)	1130				
	GRAVEL/ PIPE (CY)	950				
	VAPOR BARRIER (SY)	1130				
GRP 3	VAULT SLAB		11.00	88	2.2	15.4
	FOR (SF)	1600				
	REBAR (TONS)	292				
	POUR/FINISH (CY)	1322				
	CURE					
GRP 4	VAULT WALL		35.00	280	7.0	49.0
	REBAR VERTS (TONS)	215				
	REBAR HORZ #1	44				
	FORM #1 (SF)	7000				
	POUR #1 (CY)	410				
	CURE					
	REBAR HORZ #2	44				
	FORM #2 (SF)	7000				
	POUR #2 (CY)	360				
	CURE					
	REBAR HORZ #3	44				
	FORM #3 (SF)	7000				
	POUR #3 (CY)	317				
	CURE					
	REBAR HORZ #4	44				
	FORM #4 (SF)	7000				
	POUR #4 (CY)	267				

91127551757

REF - 5.0

DRAFT

DAVID A. MOWAT
BELLEVUE WA

05/02/90
file:
DAN00430

HANFORD VAULTS
SCHEDULE ANALYSIS

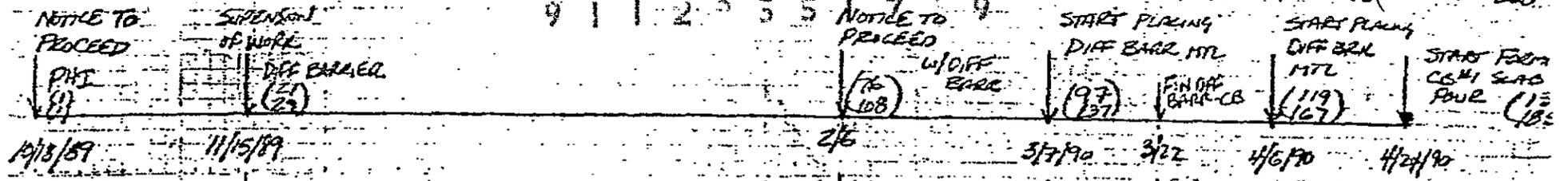
GROUP	DESCRPTH	QUAN	DAYS @ 5D/WK	HRS	WKS	DAYS @ 7D/WK
GRP 5	COAT/HYRO TEST		17.00	136	3.4	23.0
	CURE 21 DAYS					
	SANDBLAST (SF)	18070				
	COAT (SF)	18070				
	FILL TANK (GAL)	1590000				
	TEST					
	RETEST					
	LINER (SF)	15000				
	ASPH BKFL (TONS)	6200				
GRP 6	ROOF DECK		18.00	144	3.6	25.2
	SET PANELS (EA)	31				
	SEAL PANELS (LF)	1575				
	PITS & ACCESS					
	INSTALL PENETR					
	REBAR (TONS)	12				
	ROOF TOPPING (CY)	310				
	AIR TEST (DAYS)	5				
GRP 7	M&E/BKFL		24.00	192	4.8	33.6
GRP 8	WEATHER		10.00	80	2.0	14.0
GRP 9	CO CONTNGCY		10.00	80	2.0	14.0
			0.00	0	0.0	0.0
			=====			
			173.00			

91120551718

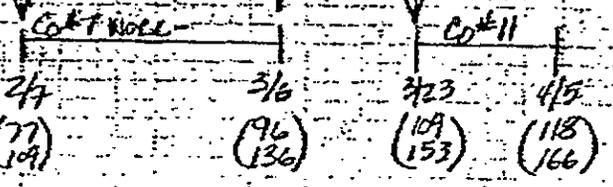
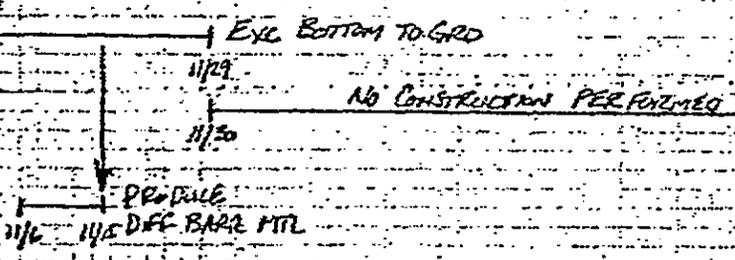
R

REF-5.1

9 1 1 2 3 5 5 140 140 160 18 200



PRELIM MTL (6) (8) 10/25/89



PROJECT CRITICAL PATH AFFECTED

REN - 6.0

12/4 (32) (46)

SUSPENSION OF WORK DIFF BARR

11/5 (21) (29)

2/6 (76) (108)

3/6 (97) (137)

DAVID A. MOWAT
BELLEVUE WA

05/15/90
file:
DAM00430

PROJECT: HANFORD VAULTS

COMPOSITE LABOR RATE

14 CARPENTERS	\$27.73	\$388.22
6 LABORERS	\$24.08	\$144.48
1 TEAMSTER	\$27.60	\$27.60
2 OPERATORS	\$28.83	\$57.66
2 FOREMAN	\$28.95	\$57.90

25 TOTAL HOURLY EXPENSE		\$675.86
-------------------------	--	----------

AVERAGE COMPOSITE RATE		\$27.03
------------------------	--	---------

91120551770

REF - 7.0